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**Drivers and impacts of farmland investment in Sudan  
Water and the range of choice in Jordan and Qatar**

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# **Drivers and impacts of farmland investment in Sudan: water and the range of choice in Jordan and Qatar**

A thesis submitted to King's College London in accordance with the  
requirements for the degree of Doctor of Philosophy in Geography

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## **ABSTRACT**

The spiking food prices in 2007/08 and 2010/11 and the absence of local *food water* prompted Jordanian and Qatari decision-makers to look for ways to achieve food security. They needed alternatives to domestic food production and food commodity imports via the global trading systems. A new policy-choice was to invest in water and land in Sudan. These so-called “land grabs” have been widely criticised because of their potential impacts on livelihoods and on ecosystem services in the target countries. By deploying an analytical framework from a pragmatic philosophical perspective, referred to here as - a range of policy-choices to achieve food and water security - this study makes an original contribution by analyzing how the goal of “importing” virtual water is a distinct choice for both Jordan and Qatar.

The study is also original in examining the politics of policy-making in Jordan and Qatar. The respective politics are shown to determine whether or not a policy-choice is adopted - in this case foreign direct investment in water and land overseas. In addition, questions on the influence of the corporate global “food regime” and global food supply value chains will be answered. These answers will further illustrate how politicised the range of choice is in Jordan and Qatar.

The thesis is the outcome of extensive qualitative research in East Africa and the Middle East between August 2010 to November 2012. In total 40 key-informants were interviewed to provide an understanding of water resources and policy-choice in Jordan and Qatar. The principal findings are that the range of choice of decision-makers in Jordan and Qatar is determined first, by strategic international food geopolitics, and second, domestic neo-patrimonial power games over water

and rents and anticipated rents. Severe environmental and social constraints in Sudan are shown to make farmland investment a costly strategy to achieve food and water security. The study contributes new knowledge on the international food politics that affect the Middle East as a region as well as on the role of food in domestic political decision-making in Qatar and Jordan. It shows that even if the potential investors can develop effective policies to “grab” or “responsibly invest in land and water” in East Africa the approach is not a feasible option. Alleviating water insecurity in Jordan and Qatar through virtual water imports from Sudan is a costly and risky option because of the environmental, political and social constraints in Sudan.

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*“So this, then, was the kernel of the brute! A travelling scholar it is? The casus makes me smile!”*

*Johann Wolfgang von Goethe in Faust I*

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## **LIST OF ABBREVIATIONS AND ACRONYMS**

AAAID	Arab Authority for Agricultural Investment and Development
ABCD	Archers Daniels Midlands, Bunge, Cargill and Dreyfus
ASTRA	Arab Supply and Trading Co.
BBC	British Broadcasting Corporation
BRICS	Brazil, Russia, India, China and South Africa
CAP	Common Agricultural Policy
CEO	Chief Executive Officer
CIA	Central Intelligence Agency
CM	Cubic metre
COP18	18 <sup>th</sup> Conference of the Parties (United Nations Climate Change Conference)
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
FDI	Foreign Direct Investment
FSDL	Food Security in the Drylands Conference
GDLA	Global Drylands Alliance
GDP	Gross Domestic Product
GIZ	Gesellschaft für Internationale Zusammenarbeit
GTZ	Gesellschaft für Technische Zusammenarbeit

GWP	Global Water Partnership
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IHE	International Institute for Hydraulic and Environmental Engineering
IMECHE	Institution of Mechanical Engineers
IMF	International Monetary Fund
IPE	International Political Economy
IR	International Relations
IWMI	International Water Management Institute
KM <sup>3</sup>	Cubic Kilometre
LDPI	Land Deals Politics Initiative
LWRG	London Water Research Group
MCM	million cubic metres
MNC	multi national corporations
MWI	Ministry of Water and Irrigation
NAFTA	North American Free Trade Agreement
NBI	Nile Basin Initiative
NGO	Non-Governmental Organisation
OECD	Organisation for Economic Cooperation and Development

QIA	Qatar Investment Authority
QNSFP	Qatar National Food Security Programme
PL	Public Law
PLO	Palestinian Liberation Organisation
SIWI	Stockholm International Water Institute
SWF	Sovereign Wealth Fund
UAE	United Arab Emirates
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
USAID	United States Agency for International Development
WBGU	Wissenschaftlicher Beirat Globale Umweltveränderungen
WHO	World Health Organisation
WTO	World Trade Organisation
WUA	Water User Associations

# CHAPTER 1:

## INTRODUCTION

# 1. INTRODUCTION

*“We could accept the drought because it was from Allah,” said Abu Khalil, “but we could not accept that the government would do nothing.”*

Thomas L. Friedmann in *The New York Times* 18<sup>th</sup> May 2013

## 1.1. Purpose and context of the study

This study examines the politics of food (Paarlberg 2010) in two countries in the Middle East, Jordan and Qatar. When the research for this study commenced in October 2009, the Middle East was a very different region. As Mitchell argues in his seminal study “Carbon Democracy” (2011), “the age of oil brought dictatorships to the Middle East” to control the flow of the black gold. However, the so-called “Arab Spring” has caused several governments that have been complicit in the Western global energy system had to step down in the face of collective social unrest. A trigger for the unrest of the masses has been the price of food, which has spiked on the world’s commodity markets in 2008/09 and in 2010/11. When soaring food prices galvanised people in the Middle East and angry masses took over the street. Despite the cushion of oil rents, the food price spikes sharply reminded Middle Eastern governments of the asymmetric global food politics (Woertz 2013b).

The politics of food are, however, in reality the politics of water, because the Middle East has run out of water for agriculture in order to produce more food for growing populations. The politics of food-water, and in particular the alternatives to domestic food production, deserve increased attention in a period of climate change. The

governments of Jordan and Qatar have sought alternatives to the asymmetric global food supply chains. They have invested in Sudanese farmland and are considering further inward investment to grow food to import in to their economies. With this food, they also “import” embedded water. Hence, an alternative to domestic food production in the two water scarce Middle Eastern economies is the acquisition of farmland in Sub-Saharan Africa.

Recent land acquisitions in Africa for agricultural production, misleadingly called “land grabs”, have gained prominence in the media, in international organisation publications and in academic publications since 2007 (Deininger and Beyerlee 2010; Knaup and Mittelstaedt 2009; *The Economist* 2010; Hall 2011; Alden-Wily 2011). Most of the analysis focuses on how land investments - by either emerging Asian economies or private sector investors from across the globe - impact land use, land rights, water use, human rights and livelihoods (Woodhouse and Ganho 2011; Deng 2010; Horne 2011; Anseuw, Cotula and Taylor 2013; Cotula 2011). Very few studies have taken an approach that analyses the role of the international food politics and the contentious politics of investment (Woertz 2011, 2013a, 2013b; Carmody 2013; Hilhorst and Nelen 2013; Brautigam 2013).

This study will address this gap. It will illustrate the crucial connection between land resources and water resources to explain the drivers and impacts of agricultural investments. It will use two Middle Eastern economies, Jordan and Qatar as case studies. The concept that underpins the land/water nexus in this study will be “virtual water”, that is the water embedded in food and other agricultural commodities (Allan

2011). It is a key concept that helps to explain the existence of inward investment in African farmland.

The study is informed by the philosophical *Pragmatic* perspective. It will be argued that Middle Eastern decision-makers have a “range of choice” in public and foreign policy making in relation to food security and the very closely related water security. The range of choice available to such decision-makers has been expanded by the inward investment in farmland option (Mitchell 2008; White 1960). “Virtual water” from overseas via land acquisition can potentially expand the range of choice. However, there is always a *theoretical* range of choice and a *practical* range of choice. In order to distinguish these two forms of choice the study will first analyse the environmental conditions in the Middle East and then show how food politics have led to the expansion of the theoretical range of choice to include investment in Sudanese farmland. In the theoretical range of choice, “sourcing” of Sudanese “virtual water” is a policy choice for Jordan and Qatar. This “virtual water” can in theory be imported to secure food imports to alleviate the pressing water scarcity in Jordan and Qatar.

However, there are always limits to the theoretical range of choice. The limits to the theoretical range of choice in Sudan - such as over-allocated surface water and the absence of physical infrastructures as well as institutional and technical capacities - will be highlighted in order to understand how they limit the theoretical options. This evidence will then be used to identify the practical range of choice, which may be very different to the theoretical range of choice.

The options open to decision-makers will also be analysed through the lens of international political economy including how international and domestic food politics, namely the “shadow state” and the global “food regime” (Tripp 2003; McMichael 2011; Friedmann 1995), influence decision-making on issues such as Foreign Direct Investment (to be referred to as FDI or inward investment throughout this study) in agricultural land.

A prime concern of this study is to show how dynamic domestic and international conditions determine the theoretical range of choice of Middle Eastern decision makers wanting to take advantage of the virtual water “trade” concept. The study will also contribute new knowledge to the increasing literature on “land and water grabbing”. “Land grabbing” has become a significant focus of research since 2007 after agriculture was identified as one of the most strategic fields in Middle Eastern politics. These current politics have been shaped in a period of global economic crisis.

## **1.2. The context of this study: the increasing importance of agriculture**

According to David Harvey (2010), something ominous began to happen in the United States in 2006. While America experienced a disruption in the housing market, which led to one of capitalism’s greatest recessions in history, the months and years since then have witnessed a sharp increase in global food prices and further volatility. Although these two events may not be directly related, the period experienced a sharp increase in interest in agriculture in global financial circles. Africa’s agricultural sector experienced renewed interest due to its perceived potential land and water abundance. It was the beginning of a rush for land in Africa (Knaup and Mittelstaedt 2009). Triggered



by spiking food prices (Custodis 2013) and Washington and Brussels generated demand for food crops to produce biofuel (Kesicki and Tomei 2013), investment in agriculture began to be seen as commercially viable and a source of financial returns.

The financial sector became a cornerstone in Western economies after the world experienced the crash of the IT-led economy, which occurred at the beginning of the millennium. The financial sector took over to mitigate the consequences of the crash and generated short-term apparent economic prosperity (Stiglitz 2009). The financial sector also saw agriculture as a potential source of income, and the increased trading exacerbated the spiking food commodity prices (Piesse and Thirtle 2009). At the same time, Sovereign Wealth Funds (SWFs) from Asia invested in agriculture with the intent of countering food and water insecurity across the Asian economies. These two very different sources of investment brought about higher food prices and negatively affected food security. The Middle East was particularly vulnerable to food price spikes because of the increasing regional physical water scarcity that has made food self-sufficiency impossible (Allan 2002). As a result, Middle Eastern economies have had to search for alternative policy options, which have been included in a new range of choice for policy-makers.

The study will analyse the renewed interest in agriculture by two Middle Eastern economies, Jordan and Qatar. It will examine the political drivers and potential impacts of the new land rush in Sudan, where both economies have leased land for agricultural production. Governments and investors have neglected global agriculture since the 1980s as a field of strategic importance as it has been perceived that the global system

was globally secure (Mueller 2009; UNEP 2011). This perception quickly altered with the onset of the 2007/08 food price spikes.

### 1.3. Why agriculture and inward investment? Why now?

*Agriculture* played a key role in the development of human civilisation. This primary sector has long been the major economic sector across the world. Only since the Industrial Revolution in Europe in the 19<sup>th</sup> century, has the agricultural sector decreased in its share of economic activity. This trend has characterised industrial modernity where immense productivity gains have been achieved through investment in and the utilisation of technology, skills and farming expertise. In Africa, the agricultural sector has not made significant productivity increases over the past five decades as a result of under-investment in agriculture (UNEP 2011; see Figure 1.1. below).



**Figure 1.1. Maize Yield Development in the United States, China, Latin America and Sub-Saharan Africa 1866 to 2003 (Molden 2011)**

In the industrialised world food prices have decreased since 1800 as a consequence of a mix of technological gains that increased yields, returns to labour, water, land and investment. A hidden factor has been the dangerous system of accounting, which is blind to the input costs of water and does not internalise the impacts of misusing the environmental resources of water and energy. However, as a consequence mainly of the policies in the Western and the emerging economies, a further competition of water resources has emerged consequent on the devotion of food crops to the production of bio-energy. Bio-energy production has competed for water and land with food crops in the past 10 years. This crucial water/food/energy nexus has implications for the primary sector (Kesicki and Tomei 2013; Hoff 2011).

*Agriculture* has become a profitable sector for capital investments as a result of higher global food prices. After, or due to decades of neglect, agriculture has become an “asset class”<sup>1</sup> (Campanale 2013), a type of investment similar to bonds, stocks, real estate and cash. There are two types of investors: State-funded investors in the Middle East, China, India and other parts of the world and private sector investors such as pension funds, who are believed to be significant players in agricultural investments (GRAIN 2011). These two types of investors may have very different objectives. Whereas state-backed investors seek to address food and water insecurities in their domestic economies, the most daring private sector investors seek to invest in the most remote regions of the world in so-called “frontier markets”, where natural resources are available for “free-riding” and therefore potentially yield very high returns. If successful, those who dare

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<sup>1</sup> A broad group of securities or investments that tend to react similarly in different market conditions. Individual asset classes are also generally governed by the same rules and regulations. There are three basic asset classes: equity securities (stocks), fixed-income securities (bonds), and cash equivalents (money market vehicles). Real estate, commodities and derivatives are also considered asset classes by some (Financial Times Lexicon, 2012).

may expect either less dependence on volatile global food markets or high financial returns. In the world of finance, “ag investments” have seen a growing interest as price spikes in 2007 signalled a number of opportunities through short-term speculation and investments in the supply-side.

*Agriculture* is foremost a politically strategic sector as food security and the way societies perceive it have a profound impact on the survival of regimes. As the former Director General of International Center for Agricultural Research in the Dry Areas (ICARDA) and advisor to the former Egyptian President Mubarak, Professor Adel El-Beltagy, stressed: “agriculture is like high blood pressure – if untreated it becomes a silent killer for the ruling classes” (Personal Communication with Adel El-Beltagy 2011). Agriculture at a time of climatic change poses new risks to investing economies and to target economies. Africa, where food security issues have been prominent throughout the twentieth century, will be particularly challenged as a consequence of high population growth. The World Bank (2009) has estimated that the African continent requires 14-17 billion US Dollars annually to adapt to climate change. The lion’s share will be devoted to agriculture. However, such investment could either lead to further environmental degradation or, if done correctly, it could lead to new economic opportunities as Africa’s agricultural sector has the lowest returns to water and land in the world (FAO 2011).

#### **1.4. Farmland investment**

According to estimates by the controversial Land Matrix public database (Land Matrix 2012) 34 million hectares of farmland in developing countries have been leased globally

by foreign investors in the past ten years. A major target region is Sub-Saharan Africa, a previously unlikely destination for investment as it is a region, which has been characterised by low agricultural productivity and serious food insecurity for decades. The new-found interest has been based on a reappraisal of Sub-Saharan Africa's water and land resources (FAO/World Bank 2009).

Investment in agriculture is not a new phenomenon. The last investment wave into Africa's agricultural sector occurred during the 1970s, which some linked to last major oil price crisis and related food price spikes. However, the investments largely by Gulf investors proved to be unsuccessful (O'Brien 1985; Woertz 2013a, 2013b). Some commentators link failed investments by Arab economies in Sudan to the famine of 1985/86 (O'Brien 1985). The Food and Agriculture Organisation of the United Nations estimates that African economies will double or even triple in population between 2005 and 2050 from 750 million to 1.5 – 2 billion people (FAO/World Bank 2009).

Other world regions are also prone to food insecurity as a result of climate change, demographic pressures and energy requirements. Water scarcity is increasingly observed in hotspots in Asia, Africa and Latin America. After ignoring agriculture for almost three decades, the food price spikes in 2007/08 alarmed decision-makers and international development experts and led to strategies to increase the supply of food commodities.

Sub-Sahara Africa's under-developed agricultural sector has been identified as the frontier market. The World Bank's *World Development Report - Agriculture for*

*Development* (2008) and the joint World Bank and FAO (2009) study *Awakening Africa's Sleeping Giant – prospects for commercial agriculture in the Guinea Savannah* launched a new discourse on agriculture in the field of development. This discourse was echoed by renewed interest in global farmland by Western private sector investors and Eastern sovereign wealth funds and government investments (Allan et al. 2013).



**Figure 1.3. International press cuttings on land investments**

The recent surge of interest in land in Africa has not been without its critics.

Researchers, international organisations and Non-Governmental Organisations (NGOs)

fear that Africa's peasant farmers' may be alienated from the economic prosperity

which may surround them, be dispossessed and displaced from their land, their

economic and their political security as a result of less food being available in local markets, and a violation of basic human rights (de Schutter 2011; Hall 2011; Deng 2011; Palmer 2010). The critical discourse around agricultural FDI called “land grabbing” was initiated by Western media, especially by American and European newspapers and magazines. As a consequence, numerous media reports have described the criticised the perceived rush to invest in global farmland since 2007 (see Figure 1.2.).

A growing number of NGOs have dedicated resources to provide analyses of the land investment phenomenon in recent years. The NGO GRAIN first compared the acquisition of farmland by Asian investors to the colonial “land grabs” by Western powers in Africa during the 19<sup>th</sup> and early 20<sup>th</sup> century. A DFID-sponsored “Future Agriculture Consortium” has been established to gather and fund researchers and academics (including the author) from mainly the social sciences to frame a debate on “land grabbing” (Keulertz 2012a). Dire outcomes were predicted in the course of this twenty-first century’s “Scramble for Africa” (Smith 2009). The meta-equation inspiring investors is allegedly simple and conceivable. It draws on Malthusian pessimism, which predicts inadequate food supply to meet the needs of a global population of 9 billion by 2050. These assumptions predict higher food prices. Investment in the agricultural sector is inevitable response to these circumstances in order to prevent a catastrophe of Malthusian scale (Custodis 2013). However, this analysis will show that there are profound political and economic pressures beyond the over-simplified Neo-Malthusian narrative that explain the drivers of land investment.

Despite very critical interest amongst - the mainly Western - public, media and development agencies, the phenomenon is still under-researched. It is a very complex analytical challenge, which cannot be understood without addressing *big issues* that are subject to global political economic issues such as global food security and global political change. However, as this wide range of issues cannot be properly covered in a doctoral thesis the study will focus on a narrower theme, namely why Middle Eastern economies such as Jordan and Qatar have acquired land in East Africa in Sudan? Other investors from East and South Asia, the Western financial sector and regional African investors will not be discussed. The study argues that the current research community remains shallow in the focus and scope of its inquiry when it compares current investment in Africa with colonial investments by for example Cecil Rhodes (Palmer 2010). There is a tendency to portray investors from the Middle East as “grabbers” for which there is hardly any evidence because the investment projects are only for the most part at an appraisal rather than an operational stage (GIZ 2012; Anseuw 2013; Woertz 2013; Verhoeven 2013; Zetland and Moeller-Gulland 2013; Keulertz 2013a and b). There is also a tendency not to incorporate the global economy of trade - or what is described as such - in the analysis of “land grabbing” in Africa. Possibly most important, the research community, as well as investors, have been uninformed about the role of water resources in such investment strategies and have thus far have been hydro-illiterate. Instead, the focus has been placed on livelihoods, land rights and legal issues that arise from the land agreements. The significance of the blindness to water resources will be a major feature of the analysis.

The question where and how the most crucial resource “water” features in the business plans of investors and in their strategic thinking has not been investigated thus far. So,



this study seeks to contribute a better understanding of the current land investment/”land grabbing” phenomenon in Africa by analysing the rationale of Middle Eastern investors – their assumptions and their capacities to evaluate the challenges of mobilising water and land resources in the environmental and socio-economic circumstances of Sub-Saharan Africa. The analysis will be completed through an analysis how domestic political pressures from influential political players from within the respective “shadow states” have impacted the range of choice by including foreign direct investment in land and water resources in Africa. The focus of the study will therefore be on the internal national politics and on why land grabbing is pursued by Jordanian and Qatari public and private investors.

The study will explore the land and water grabbing issue through an innovative and wide ranging research approach by investigating the drivers and impacts of Middle Eastern farmland investment in East Africa. It will be shown that land investments should be understood through a water security perspective as the practical range of choice available to would-be investors is limited by timely water availability. Other choices are available including the virtual water “trading” option. This composite approach has enabled an analysis beyond that of other current research. It has contributed new knowledge to the inward investment and food and water security literature.

### **1.5. The range of choice in water management**

The over-arching concept of this study will be the *range of choice* concept. It was developed by US geographer Gilbert White, who called for a pragmatic approach to

geographical problems. The range of choice can be defined as a concept for decision-makers to include all possible alternatives to prevent a hazard such as food and water insecurity (Wescoat 2006). Inward investment in land will therefore be interpreted as being an element amongst a number of choices available to Jordanian and Qatari decision-makers to alleviate food and water insecurity. The range of choice concept will be seen to be integral to the international political economy. It will be shown that the range of choice approach in Jordan and Qatar is subject to political factors in both international and domestic politics.

The insight of virtual water “trade” will be used to frame the *range of choice* concept with the analysis of the domestic and international drivers of agricultural FDI as facilitated by virtual water “trade”. “Virtual water” is the volume of water used to grow and produce a commodity (Allan 2011). For example, the water embedded in one tonne of wheat is about 1,300 cubic metres or 1,300,000 litres of water; the water embedded in one tonne of beef is even as high as 15,500 m<sup>3</sup> of water. Research on virtual water has been further improved by identifying the “blue” and “green” water in a given commodity (Aldaya 2011). “Blue” water is water from streams, lakes, rivers and groundwater aquifers. “Green” water is the water in the root-zone - consequent on rainfall - that stays long enough in the soil profile to support natural vegetation or crops (Falkenmark et al. 2006; Hoff 2013; Kizito et al. 2013). This insight has profound significance for sustainable food production since “green” water has much lower opportunity costs than “blue” water (Gilmont and Antonelli 2013).

There is normally, however, strong competition for “blue“ water. “Blue“ water can be used in other economic sectors such as energy, tourism, and industry or for the prime priority of drinking water services. Modellers from IHE Delft and the University of Enschede have generated the metrics used in this study (Hoekstra and Chapagain 2008). The study will deploy the “virtual water concept” in comparing and analysing agricultural investments and understand them in international political economy contexts. The “virtual water concept” provides a very useful lens with which to examine the underlying hydrological and economic fundamentals of particular farmland investments.

In both Jordan and Qatar, the range of choice in relation to water management options will be analysed through a political lens. In particular, the role of the “virtual water” concept will be used as way to identify the theoretical range of choice.

### **1.5.1. Two key concepts that explain the drivers of investment in land**

It is argued here that the drivers of investment cannot be understood without taking a close look at the international political economy, where a wide range of theoretical concepts shed light on the political-economic causes and impacts of inward investment in land. From the discipline of international political economy, the structuralist “food regime theory” concept will be deployed to explain the global drivers that influence the theoretical range of choice. Food regime theory as defined and developed by Harriet Friedmann (1993) and Philip McMichael (2009) is a theoretical framework that explains the underlying structures of the post-World War II construction of international agriculture. Regulation of the food regime both underpinned and reflected changing

balances of power among states, organised national lobbies, classes – farmers, workers, peasants – and capital” (McMichael 2009). According to food regime theory the “globalization of agriculture” first became visible when a British-led outsourcing of agricultural activities to tropical sugar plantations in its 19<sup>th</sup> century colonies. This phase was succeeded by trade in basic grains and livestock from settler colonies to the industrialising European economies in the 19<sup>th</sup> and early 20<sup>th</sup> century. This phase was still evident up to 1930. The “British workshop” also functioned as a food system that fed the prospering middle classes around Europe with the basic foodstuffs but also foodstuffs and beverages of growing popularity, for example tea and coffee (McMichael 2009; Keulertz 2012b).

This first food regime lasted until the 1930s. After the Second World War, a US-led second food regime re-routed surplus food from North America to strategically important regions during the Cold War US-Soviet global dichotomy. This US food system was deployed to secure the loyalty of critical allies against communism. Fuelled by higher productivity, agro-industrialisation, new technologies, and more complex food supply chains and transnational linkages resulting from the global agricultural division of labour. This outcome led to further “commodification” characterising the development strategy of Western states (McMichael 2009). At the same time, both the US and the European Union introduced a costly but highly efficient system of agricultural subsidies to protect their markets against the perceived communist threat (Keulertz 2012b; Keulertz and Sojamo 2013).

A third food “corporate” food regime emerged in the 1980s possibly as a result of the deep subsidization and industrialisation of food politics in the immediate post-war era (McMichael 2009). Cereal traders such as the ABCD in global food trade (Archers Daniels Midlands, Bunge, Cargill and Dreyfus) had 150 or more years of global trading expertise they remained major players in the Western-led global staple grain supply chains (Murphy et al. 2012). Subsequently supermarket retailers and wholesalers rapidly grew in size and power as a consequence of a deregulation and the arrival of computing and other logistics in the 1980s. By incorporating new regions (Latin America, Africa and Asia) into supply chains to provide more meat and fish, more fresh fruits and vegetables and more biofuels, Western consumers were able to experience an unprecedented nutritional journey. In addition, the industrialisation of food production and the subsequent introduction of economies of scale and scope enabled traders and retailers to produce more food at lower prices (McMichael 2009; Teubal 1993; Friedmann 1993; Keulertz 2012b).

The current global corporate food regime is, however, subject to major geopolitical pressures. Asian traders are quickly catching up with Western market “hegemons” using similar political economic strategies to those of their Western counterparts. The new economic giants from East Asia, the NOWS (Noble, Olam, Wilmar and Sinar Mas) reveal the vulnerability of the Middle East in the corporate food regime. It will be shown that the second and the third food regime have had a profound impact on the theoretical range of choice in Jordan and Qatar because the second and third food regimes have been very politicised. These food regimes explain the international drivers of farmland investment.

Since these food supply chains are all in private sector markets, the role of private sector actors/elites has gained more prominence across the world in the globalised economy since the advent of the age of economic globalisation. In particular, Middle Eastern political economies are often characterised by the condition of having strong societies but weak states, which are at a “low end of a spectrum of capabilities” (Migdal 1988: 5). Middle Eastern political economies are also characterised by the presence of a strong “shadow states”, where the real nexus of national power is located (Tripp 2003; Springborg 2007). This study argues that stakeholders within the “shadow state” are currently under-researched. However, that research which is available confirms that domestic politics in Jordan and Qatar determine the outcomes of agricultural investment in Sudan.

### **1.5.2. The limitations: the case for eclecticism**

Apart from the international and domestic drivers of this study, the political economy and the environment in Sudan impose severe limitations on the expansion of range of choice. First, there are high financial risks associated with agricultural development in Sudan by two newly investing economies such as Jordan and Qatar. Secondly, there have been other economic factors such as an absence of agricultural skills, health provision and the availability of energy and fuel for investing economies. Thirdly, Sudan has a distinct political economic history that has shaped the developmental context. Finally, the environmental conditions for large-scale agricultural production add further risks and opportunities.

Identifying and explaining the limitations of the range of choice is a suitable case for deployment of analytic eclecticism. Agriculture is a field that is by nature multi-disciplinary. The expansion of the range of choice to farmland investment affects multiple disciplines. It is argued in this study that water scarcity in the Middle East has been a very important driver of investment in Sudanese agriculture. At the same time it has been shown that there are wide-ranging limitations. These limitations will be reviewed using an eclectic set of concepts and disciplines. The Jordanian and Qatari plans to grow food in Sudan impinge on development economics, development sociology, development policy and environmental sciences. All these different fields help in understanding the limitations to the practical range of choice. More importantly, only if the limitations are brought into the analysis, the Pragmatic maxim of investors can be fully grasped to understand their perceptions of their investment activities in Sudan.

#### **1.6. Aims of this study**

Populations in Jordan and Qatar have undergone significant diet changes in the past decades that impact their water requirements. The expansion of policy options to farmland investment is the only option if Jordan and Qatar want to increase or maintain economic prosperity. The application of the range of choice concept as a framework for analysis of Middle Eastern water and food security politics has not been attempted elsewhere thus far. To use a metaphor, this study will illustrate the Janus-face of Middle Eastern decision-makers in the challenges they face in providing water and food security at a time of international and domestic political change.

The land grabs research community has not yet developed useful international relations' theory with which to frame an analysis. This gap exists because of the lack of research on investing economies, in particular on "who" invests and "why" economies choose to expand their range of choice through virtual water imports via farmland acquisitions in Africa. In the case of the Middle East, this study will show that states, state funds or state-funded private sector companies carry out the vast majority of investment. At the same time the centrality of states as actors in the international political economy of food and water security has been poorly addressed in current research on farmland investment and development in Africa (Land Matrix 2013; Hall 2011; Woertz 2013a; de Schutter 2011). In addition, research on the environmental dimension of state behaviour in food and water security is largely absent.

One of the key aims of the study is to contribute new knowledge to enable the analysis of foreign direct investment in land and water resources from an international political economy perspective. State-society relations have been played out on one "table" and state relations have been played out in the international economic system on the other. Both determine the outcomes of land investment. On the international side, the global food politics that influence the "memories of concern" in the Middle East in a globalised economy will be illustrated (Woertz 2013a). On the domestic side, the study will shed light on the perceptions of the so-called "shadow state" in Middle Eastern economies and their role in inward investment decision-making.

By analysing the limitations of the expansion of the range of choice options, the study will make important contributions to the study of development economics, sociology,



politics and environmental studies. It will also provide new insights on the role cultural relations between elites from the Middle East and Sudan. It also contributes new knowledge on the financial and environmental risks of investments in the Nile Basin.

At the geopolitical level, a major contribution of this research will be made to the growing literature on natural resource politics in Africa. A number of scholars have compared the interests of the West, multinational companies (MNCs), China, India, Russia, Brazil, South Africa (the BRICS countries) and the Middle Eastern economies in the past few years to the “Scramble for Africa” by European colonial powers in the 19<sup>th</sup> century (Carmody 2011). It is fashionable to analyse China and to a lesser extent, India’s role in Africa in these terms. However, the role of the Middle East in this “New Scramble for Africa” has not been sufficiently analysed in the Western science literature. This study makes a significant contribution to understanding this arena of international power politics of the Arab world in relating to Africa.

### **1.7. Limits of the study**

When the PhD research project commenced in October 2009, the Arab world had a very different political landscape. The developments of the so-called “Arab Spring” and the partition of Sudan have influenced the findings of the study. Although food prices partly contributed to social unrest on the Arab streets, their significance has changed frequently since 2009. As a consequence costly strategies to expand the range of choice with farmland investment overseas were therefore affected by wider political developments in all three of the countries analysed. Given the highly volatile political situation in the Arab world, the political developments that have affected food security

policy choices have been included in the analysis until May 2013. The study could not incorporate the recent power transition in Qatar, but it does analyse the situation prior to 25 June 2013 when the former Heir Apparent Tamim Al-Thani succeeded his father on the throne (*The Economist* 2013). It is also argued that Qatar's post-25 June political landscape is impossible to analyse at this stage. At the same time, the recent political unrest against the President of Sudan by a large number of protestors cannot be included in the analysis on the Jordanian and Qatari expansion of their range of choice with respect to farmland investment in Sudan (*BBC* 2013).

### **1.8. Chapter structure**

The second chapter will provide an overview of relevant environmental resources to the extent they have been relevant to farmland investment by Jordan, Qatar in Sudan.

Chapter 3 illustrates the historical background of past land acquisitions by Middle Eastern investors in East Africa in the 1970s and 80s. It explores the reasons for failure of previous engagements in East African agriculture. The chapter will conclude with an analysis of current investment trends and of the so-called "land grabbing discourse".

Chapter 4 will present and discuss the theoretical framework used to analyse Jordanian and Qatari farmland investments in Sudan. Chapter 5 will provide the methodology that has guided this study.

Chapter 6 provides an empirical analysis of the international political-economic factors that have influenced the expansion of the theoretical range to East African farmland investments by Jordan and Qatar.

The 7<sup>th</sup> chapter will be devoted to analysis of the domestic structures and pressures in Jordan and Qatar that influenced the decision to invest in Sudanese farmland.

Chapter 8 will illustrate the multiple limitations of the plans to expand the range of choice to include Sudanese farmland investment in Jordanian and Qatari policies. This analysis feeds into a discussion on the Pragmatism of the two investing economies. It illustrates how the practical range of choice has been influenced by Pragmatic perceptions of foreign policy. The concluding chapter number 9 summarises the findings and reviews future research directions for analysis of the political economy of water and food in the Middle East.

## **1.9. Research questions and research hypotheses**

There are three groups of research questions that will be answered in three empirical chapters. The first question and sub-question address food politics issues at the global level. The other questions cover the domestic political influences on Jordanian and Qatari range choice issues. These two questions refer to the institutional and capacity limitations and the environmental constraints that have shaped the range of choice.

### **1.9.1. Global issues**

#### **Question 1:**

What is the role of the international food regime on the practical range of choice of Middle Eastern decision-makers?

**Hypothesis:**

The global superstructure of food politics decisively influences the practical range of choice. The international corporate food regime enjoys access to the most productive agricultural land across the world. The global food regime permeates the whole world's food supply chain. Expanding the range of choice to investment in Sudan is a way out of dependence from the global food regime.

**Methods applied to answer this question:**

Key-informant interviews, participant observation and statistical analysis

**Sub-Question 1.1:**

What are the perceptions of the Qatari and Jordanian decision-makers about their national water security?

**Hypothesis:**

The production of food commodities in Qatar and Jordan has been subject to severe physical water constraints. The food price spikes in 2007/08 were a tipping point in the perceptions of policy-makers in Qatar and Jordan. Addressing physical water scarcity is the main underlying driver of the expansion of the range of choice to find new sources of virtual water “imports”.

**Methods applied to answer this question:**

Key-informant interviews and participant observation

**1.9.2. MENA and national level issues**

**Question 2:**

What is the rationale of Qatari and Jordanian investors (and decision-makers) on investment in farmland overseas as a choice amongst their practical range of choice?

**Hypothesis:**

The decision-makers in both economies seek to decrease water use in agricultural production by expanding their range of choice to agricultural imports from Sudan. In particular, these initiatives can provide alternatives to domestic demand-side water management.

**Methods applied to answer this question:**

Key-informant interviews, document analysis and historiography

**Sub-Question 2.1:**

What is the role of the “shadow state” in influencing the range of choice to virtual water “imports” from Sudan?

**Hypothesis:**

The agricultural sectors of both economies are subject to severe internal political pressures from farming interests from within the “shadow state”. Internal actors in inefficient agricultural sectors pose severe constraints to current government decisions. Water resources are highly political in both economies; hence expanding the range of choice to the virtual basin in Sudan can decrease the influence of some of the interests within the “shadow state” on water resources management in both economies.

**Methods applied to answer this question:**

Key-informant interviews and participant information

**1.9.3. Sudan and environmental issues**

**Question 3:**

What are the key limitations to expanding the range of choice to virtual water “flows” between East Africa and the Middle East?

**Hypothesis:**

Agricultural investments in economies such as Sudan also pose severe risks to investing economies, especially in the form of economic and political costs. Cultural factors that constrain the required high yields also prevail. Moreover, the global political economy of food has been subject to a shortage of skills in agriculture since the 1980s. Skilled labour for large-scale agricultural production is scarce across the world. Agricultural investment in the Sudan therefore embeds high opportunity costs that are often not taken into account by investors.

**Methods applied to answer this question:**

Environmental methods, statistical analysis, key-informant interviews and case study approach

**Sub-Question 3.1:**

What is the role of water resources availability for the practicability to expand the range of choice to farmland investments from Sudan?

**Hypothesis:**

Water resources management in the targeted economies is the most crucial variable in the range of choice. The limited “blue” water resources in the Nile Basin mark severe challenges for investors who seek to expand their range of choice. The hydrological sensitivities are not taken into account by investors.

**Methods applied to answer this question:**

Key-informant interviews, document analysis and case study approach

### **1.10. Concluding remarks of this chapter**

This chapter has introduced the context, theoretical background, aims and research questions of the study. The next chapter will present the environmental challenges faced by Jordan and Qatar. It sets the scene and provides an explanation why the expansion of the range of choice has been expanded in the belief that it could alleviate growing water scarcity and food insecurity through investment in Sudanese farmland.

# **CHAPTER 2:**

## **RUNNING OUT OF WATER? THE ENVIRONMENTAL QUESTION IN JORDAN AND QATAR**



## **2. RUNNING OUT OF WATER? THE ENVIRONMENTAL QUESTION IN JORDAN AND QATAR**

*“Any delay in a serious response to the water challenge corresponds to mass suicide.*

*The water apocalypse is knocking on the Arab doors, right now!”*

Najib Saab, General Secretary of the Arab Forum for Environment and Development 12

June 2010

### **2.1. Introduction**

This chapter provides the environmental and political economy settings in Qatar and Jordan to provide the context of the analysis of water and food in the two economies.

Although Jordan has sufficient water resources to produce vegetable crops, both countries are affected by water scarcity for the production of key water-intensive commodities such as wheat, animal feed and livestock. The options in the range of choice of both economies will be considered for the two countries.

The chapter will first provide an overview of the global water scarcity and water security discourses. It will also explain the different sources of water available for agricultural production. Second, a “water map” of both countries will be introduced to illustrate the poor water resource availability in the two economies. It will be argued that the provenance of their water resources must be distinguished in terms of whether it is “blue” and “green” water. This evaluation will be underpinned with hydrological data from the Food and Agriculture Organisation of the United Nations database (AQUASTAT) for the investing economies and with data from the Challenge

Programme on Water and Food (CPWF) and data for the target economies. Third, the role of food trade in alleviating water resource scarcity in Qatar and Jordan will be presented by analysing the “virtual water imports” of the key commodities wheat, animal feed and livestock.

The food and virtual water data will be from the databases of the United Nations (FAOSTAT) and the Water Footprint Network (WaterStat). The options of the decision-makers to ensure food security in the two countries will be explained as well as how virtual water “import” options expand their range of choice to farmland investments, for example in Sudan. These options expand the theoretical range of choice. Finally, the “water map” of Sudan will be developed to illustrate the nature of agricultural production in East Africa and how available “green” water resources are not utilised in ways that realise their potential.

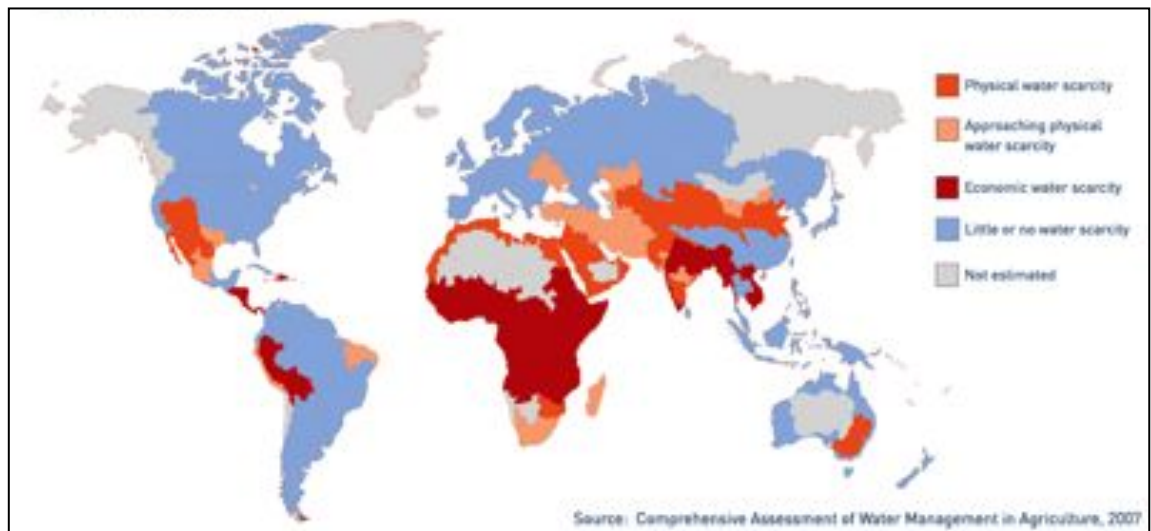
The aim of the chapter is two-fold: it first seeks to set out the nature and limits of the water resources in Qatar and Jordan. Second, through highlighting the extent of their dependency on strategic commodity imports, it reveals the exposure of both economies to current and future food and water insecurity. The chapter also provides background information to answer the research questions by illustrating the availability of water resources in the two investing economies and in the target economies respectively. The levels of imports of key food commodities will reveal the levels of dependence on international trade. The very high levels of net virtual water “imports” embedded in key food commodities will explain why foreign direct investment options are being sought as an alternative to domestic agricultural production.

## **2.2. The global water scarcity and security discourses – key introductory background concepts**

It is important at the outset to establish the status of water resources in Jordan and Qatar. It is also important to provide definitions of water scarcity and to emphasise that Qatar and Jordan are located in a region exposed to serious physical water scarcity.

*Physical water scarcity occurs “when there is not enough water to meet all (perceived) demands, including environmental flows. Arid regions are most often associated with physical water scarcity, but water scarcity also appears where water is apparently abundant, when water resources are overcommitted to various users due to overdevelopment of hydraulic infrastructure, most often for irrigation” (FAO 2007: 11-12). Economic water scarcity occurs when through “a lack of investment in water or a lack of human capacity to satisfy the demand for water. Much of the scarcity is due to how institutions function, favouring one group over another and not hearing the voices of various groups, especially women” (ibid: 11).*

Figure 2.1. illustrates the definitions by providing an overview on world regions with no water scarcity, economic water scarcity, approaching physical scarcity and physical water scarcity. While in Qatar and Jordan millions of men and women have decreasing access to water resources due to physical water scarcity, the population and economy of Sudan is characterised by economic water scarcity.



**Figure 2.1. Map on global water scarcity (IWMI 2007)**

### **2.2.1. Origins of water**

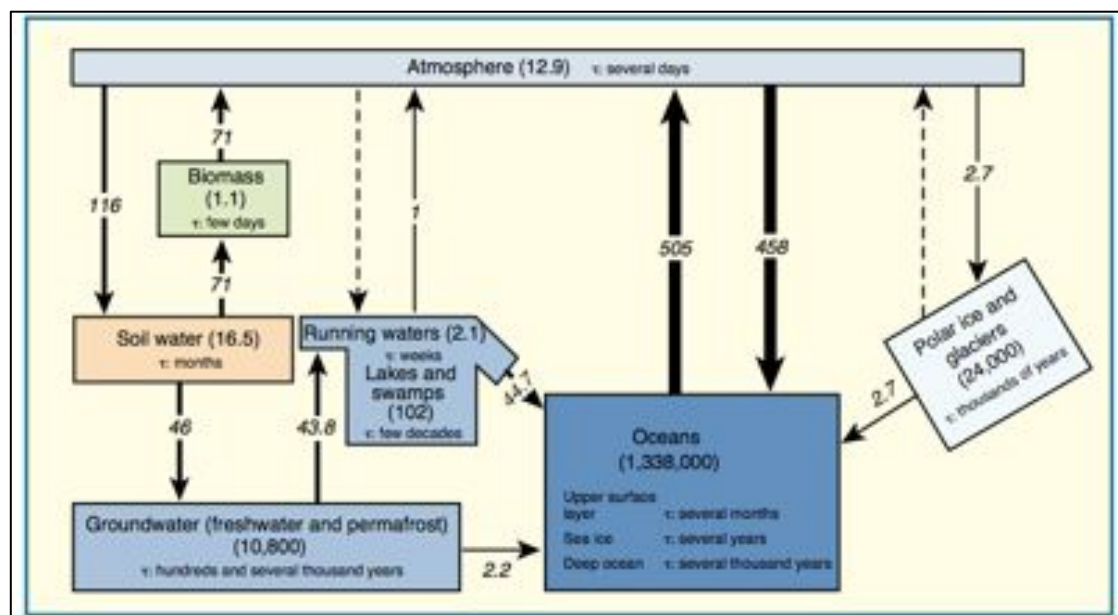
The global water discourse is not only about physical and economic scarcity. It extends to the sources of water used in agricultural production. Almost all reviews of water in agriculture prioritise “blue” water. The broadening of the study of water resources from the engineer’s concern to include human and societal interventions as well as impacts has been influenced by scholars such as Gilbert White (Mustafa 2013). The literature on water resources management still privileges the availability of surface and groundwater in river basins or aquifers across the world. As Waterbury sums it up, there has been a tendency to examine “the different pieces of the water use puzzle that was producing the resource crunch” (Waterbury 2002: 4). The debates that followed were often centred on the unfolding drama in shared watercourses that were the result of the over-allocation of surface water to one riparian in a shared river basin. For example, the Nile has attracted academics and researchers from across the world to analyse the role of power within the basin, which is still legally determined by the contested Nile Treaty of 1959 (Zeitoun et al. 2010; Cascao 2010; Waterbury 2002).

The “resource crunch” theme has also been taken further in the topic of water and conflict, sometimes called “water wars” for example by Peter Gleick, who warned of future conflicts over water as a result of population growth and water scarcity in areas mostly affected by increasing populations. He pointed out that 50% of Middle Eastern populations rely on freshwater resources from river basins sourced outside the region - such as the Nile and the Euphrates and Tigris (Gleick 1993: 16). Gleick’s argument reveals the bias toward the role of freshwater from rivers and groundwater aquifers. This is true for a poorly rainwater endowed region such as the Middle East but not for areas like Sub-Saharan Africa, where most of agricultural production is rainfed (Falkenmark et al. 2006). The unhelpful sensationalist perspective that is promoted by several commentators outside the discipline of geography has led to the narrow focus on “blue” water as the main contested resource.

Most studies on land investments and their impacts on water resources have also emphasised the role of “blue” water and contested rights. Allan (2011) has highlighted the need to be “wise about water”; this study will follow his suggestion that water resources should include water beyond the narrow focus on “blue” water.

The vast amount of global water is not of use for human beings. 97.5 per cent of global water is salt water in oceans and seas. Out of the remaining 2.5 per cent, 2.4 per cent is located in glaciers and is therefore unavailable for any human utilisation. The remaining 0.1 per cent is available for domestic, industrial and agricultural use. It should be noted that all numbers should be taken with great caution as Gleick et al. (2011) warn the readers of their *World Water Report*. The German Advisory Council on Global Change has provided the residence times where and how long water remains in the water cycle to highlight the risks of climate change on water sources. The scientists note:

The atmospheric water vapour, which has condensed over the catchments and has not evaporated flows off in rivers as well as underground. The catchments of rivers and the continents provide a suitable scale for water balances (Figure 2.2.). Their mean climate and climate variability show a more or less pronounced inter-annual and seasonal variability of runoff, whereby dry and wet periods may be of extreme intensity and duration. This natural characteristic of the climate system is mainly determined by the dynamics of atmosphere-ocean interactions. The total volume of water withdrawn by humans for domestic, industrial or agricultural use is estimated at 3,500–5,000 km<sup>3</sup> year<sup>-1</sup>. Although this amounts to only about 1% of annual global precipitation (see Figure 2.2.), the proportion rises to 5% of precipitation over landmasses (111,000 km<sup>3</sup> year<sup>-1</sup>) and to 10% in relation to the total runoff of continental riverine systems, which is estimated at about 30,000–50,000 km<sup>3</sup> year<sup>-1</sup>. Given the substantial interannual and seasonal variability of precipitation, water resources may become scarce in densely populated regions (WBGU 1997).



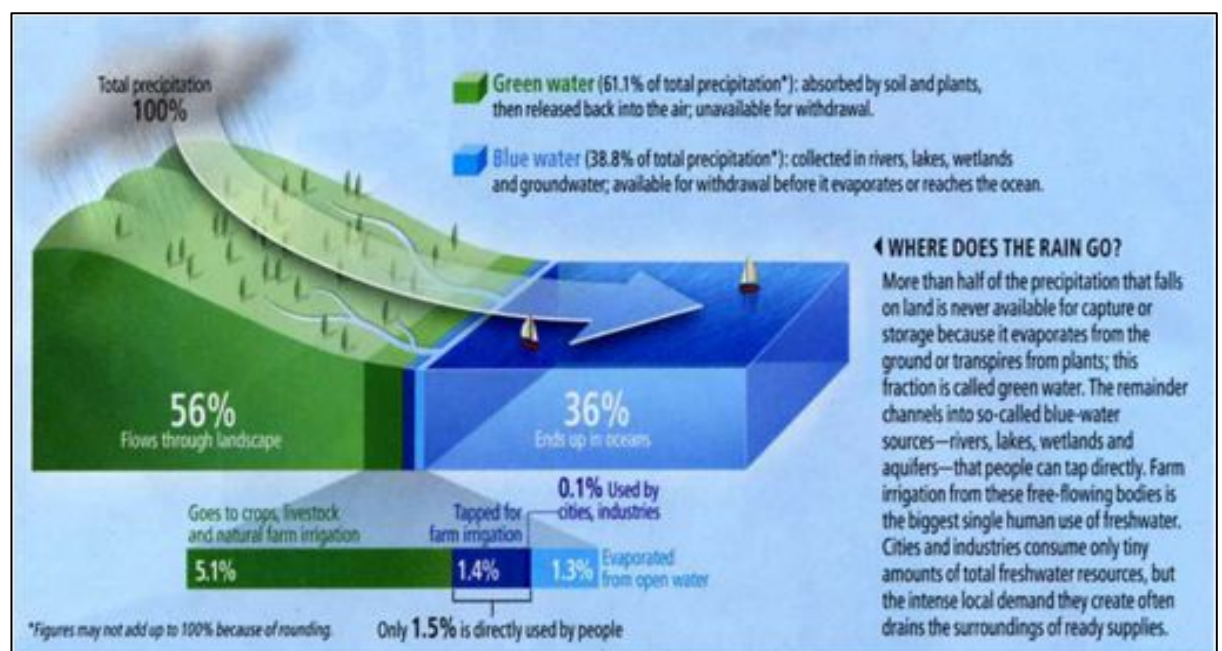
**Figure 2.2. Global hydrological cycle: reservoirs (in 1,000 km<sup>3</sup>), fluxes (in 1,000 km<sup>3</sup> year<sup>-1</sup>, *italics*) and typical residence times  $\tau$ . (WBGU 1997)**

### **2.2.2. Colours of water**

The complexities around water resources are difficult to communicate and have often led to misleading estimates on water availability for human and ecosystems use, in particular in developing countries such as on the African continent. However, Chartres and Varma (2010) provide a useful estimate of global water use. They estimate that 0.1 per cent, equal to approximately 4900 billion cubic metres per year of “blue“ water, is used by society and its economies for domestic, industrial and agricultural production and related food processing uses. Domestic water use including for drinking water uses roughly 7 per cent of our total “blue” water uses, industrial production requires another 23 per cent. 70 per cent of global “blue” water is needed for agricultural production, hence the study deals with the role of what Allan (2011) has called “big water” in agriculture versus “small water”, which is the water used in domestic and industrial uses. It should be noted that these metrics for non-food water uses do not reflect consumptive use. Most of the water used in the domestic and industrial sectors finds its way back to the environment where it can be reused or help to sustain water ecosystem services. “Blue” water use for crop and livestock production is mainly lost to the local environment as the crops transpire it.

Yet, while these estimates illustrate the consumptive use of “blue” water, the role of supply must be further clarified. Here, the chromatic distinction of water resources as “blue”, “green”, “grey” and “silver” water (amongst others) helps in understanding and communicating the key metrics on water supply, water use and re-use to water users and food consumers.

“Blue” water is the water in rivers, lakes, streams and aquifers, which can be used for all three uses. “Green” water (see Figure 2.3.) is the water in the soil that either transpires productively in producing biomass or unproductively in economic terms but usefully in ecosystem terms in for example supporting natural vegetation in wetlands and forests. “Grey” water is a term used by the Water Footprint Network. It is the “blue” water needed to dilute the polluted water effluent from industry and agriculture to a high ecological status. “Silver water (Haddadin 2008) is desalinated water produced from seas and other brackish water sources.



**Figure 2.3. “Green” and “blue“ water (Rogers 2009)**

The “ultimate” water resource is rainfall of which 110.000 cubic kilometres fall on the Earth’s surface. Rainfall generates the water balance. The water balance consists of rainfall minus evapotranspiration and water that recharges soils, aquifers and surface waters to supply non-agricultural human needs such as domestic and industrial uses



(Mulligan 2013a: 381). The water balance is determined by the available rainfall and flows from upstream watersheds but, as Mulligan (ibid: 382) notes, “it is affected by the soil, surface and vegetation conditions, which determine how much water can evaporate”. It is important to highlight that the runoff ratios are lower (runoff per unit rainfall) are lower where vegetation cover is high. In both Jordan and Qatar vegetation cover is very low or absent. In northern Sudan vegetation cover is also very low or absent (WaterWorld 2013).

Levels of vegetation cover are relevant to this study because if vegetation cover is impacted by foreign direct investment, it may lead to less runoff and therefore lower recharging rates of surface water systems such as the Nile. As Hoff et al. (2013) stress, water resources in Sub-Sahara Africa (SSA) are viewed as “underutilised” or “untapped”. An observation affirmed by FAO (2011), which identified the SSA region with the highest ratio for cropping to actually cropped land.

Current agricultural productivity levels in SSA are very low in comparison to other world regions (see Figure 1.1.). Sustainable intensification has scarcely begun in the region’s agricultural sector. The next section will provide an analysis of data on “blue” and “green” water for SSA and the Middle East which confirm the analysis of FAO (2011) and Hoff et al. (2013).

### **2.3. Physical water scarcity in investing economies**

In order to understand the role of water scarcity as a key driver of Middle Eastern land investments in Africa, the water availability in the investing economies will be presented in the next section. As Allan notes (2002), Middle Eastern economies ran out

of sufficient local water supplies in the 1970s to meet the region's food demand. The "virtual water" concept usefully quantifies the import-dependence of Middle Eastern economies.

The extent to which Jordan has to rely on external virtual water "inflows" to supply its food accounts for 86 per cent (WaterStat 2013). The WaterStat footprint data include "green", "blue" and "grey water" required to sustain the food supply of the two economies (Mekonnen and Hoekstra 2011). For Qatar, WaterStat data for virtual water "inflows" are not available. According to the FAO Aquastat database (2012), the Qatar has access to a total of 58 million cubic metres per year (to be referred to as mcm/year) of renewable ground water resources. Hoekstra and Chapagain estimate that the State of Qatar has one of the highest virtual water "import" dependence in the world (Hoekstra and Chapagain 2008). In the following sections, the extent of physical water scarcity and, as a result, of "virtual water" dependence reflected in levels of food trade will be further clarified. A "tipping point" in the global political economy of food will be identified.

#### **2.4. The food price spikes of 2007/08 and 2010/11**

The key moment that highlighted the need to expand the present range of choice for Jordanian and Qatari food supply policy-makers was the period of food commodity price spikes that occurred in 2008. International food commodity prices were as volatile as those of 1973 and 1979. In real terms the price spikes were not as severe as those of the 1970s because of higher incomes enjoyed by many consumers in the first decade of the 21<sup>st</sup> century. However, real incomes were not significantly higher across the world as a whole. Higher incomes were restricted to developed or transition countries (Piesse

and Thirtle 2009: 119). Economies such as those of Qatar had dramatically increased their real incomes over the previous 40 years. In Jordan on the other hand higher incomes were only enjoyed by the middle and upper classes. The population below the poverty line in Jordan accounted for 13 per cent of the total population in 2008 (World Bank 2012).

During the early 2000s, food prices globally increased as a consequence of demands in East Asia and of policy changes in the OECD economies. For example, the EU sold its strategic wheat held in storage in the first half of the 2000s to respond to increasing demand. The United States and the European Union also promoted biofuels production in this period introducing policy innovations to reduce their dependence on oil imports (Piesse and Thirtle 2009; Kesicki and Toma 2013). When harvest failures in the global “food bowls” in North America, Australia, Russia and Europe occurred in 2008 and 2010, the price for key commodities such as wheat increased because of these additional pressures on supply.

The financial sector also accepted the open invitation to speculate on higher food prices (Piesse and Thirtle 2009). All of these factors caused prices such as those for wheat to peak in the first quarter of 2008 at a price of \$439 per ton on the Chicago Wheat Board. Prices soon after this peak fell to below \$300 per ton but then reached another peak in the first quarter of 2011 with prices above \$350 per ton (IndexMundi 2013).

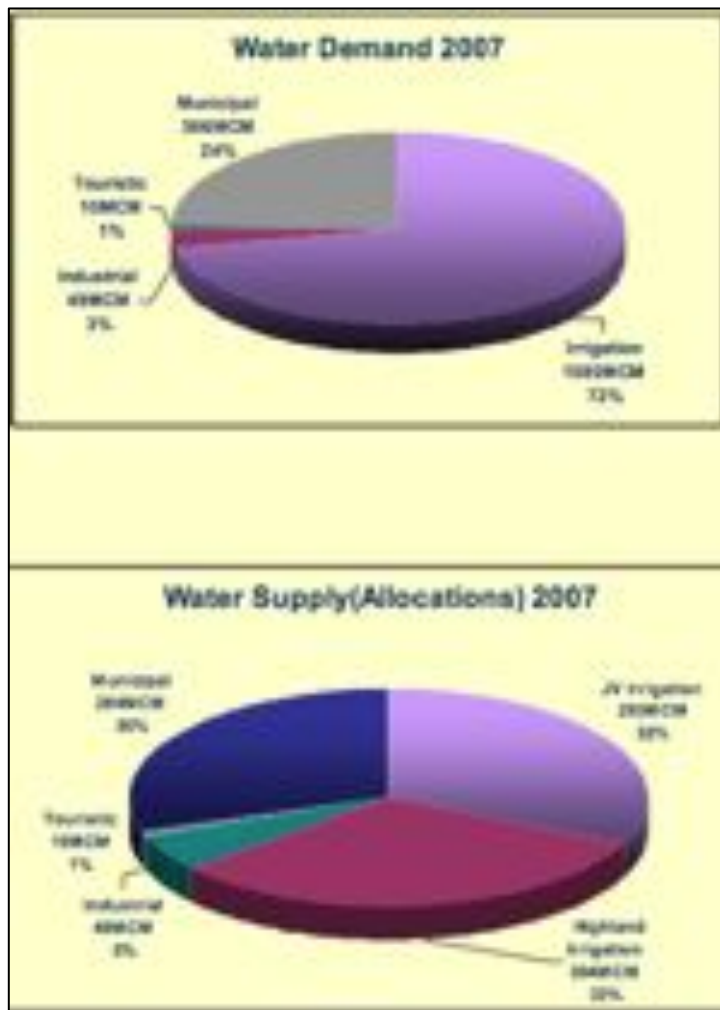
As there is no main explanatory factor for the level of prices in global markets, the reasons for volatile prices will not be the focus of this analysis. The concern of this study is to analyse the nature of the “tipping point” precipitated by evident food price increases during the late 2000s and early 2010s. The consequences for the Jordanian

and Qatari food security policy-making and decisions to expand the range of choice in the circumstances of their own physical water scarcity. The study will identify existing and new options that could increase food and water security. The Hashemite Kingdom of Jordan will be reviewed first.

## **2.5. The case of Jordan**

The Hashemite Kingdom of Jordan has substantial tracts of desert but in the north of the country it has a semi-arid Mediterranean climate with winter rains. The water resource situation in Jordan is very alarming. Jordan grew from 500,000 citizens in the early 1950s to 6.1 million in 2010 (FAOSTAT 2013; UNSD 2010). In the next 40 years, the Kingdom is projected to have a population of approximately 10 million (UNSD 2010). With a gross domestic product of US\$ 31.24 billion in 2012, the economy is considerably weaker than Qatar as will be shown in Sections 2.7. and 2.8. (World Bank 2013). The GDP per person is estimated at US\$ 6000 (CIA Factbook 2013a). The land suitable for agricultural production is around 886 400 ha comprising only approximately 10 per cent of the total area of the country. However, the total cultivated area was estimated at only 270 000 ha in 2005, of which 184 000 ha raised annual crops and 86 000 ha permanent crops (AQUASTAT 2013).

Renewable “blue” water resources in Jordan are estimated to account for 940 mcm/year (Jordan National Water Strategy 2009), which would provide per capita share of water at present of 155 cubic metres per person per year. Demand for water in 2007 was indicated by the Government of Jordan to be 1,505 mcm/year of which irrigation in the agricultural sector was the main user. (see Figure 2.4.).



**Figure 2.4. Jordan's water demand and supply (Jordan National Water Strategy 2009)**

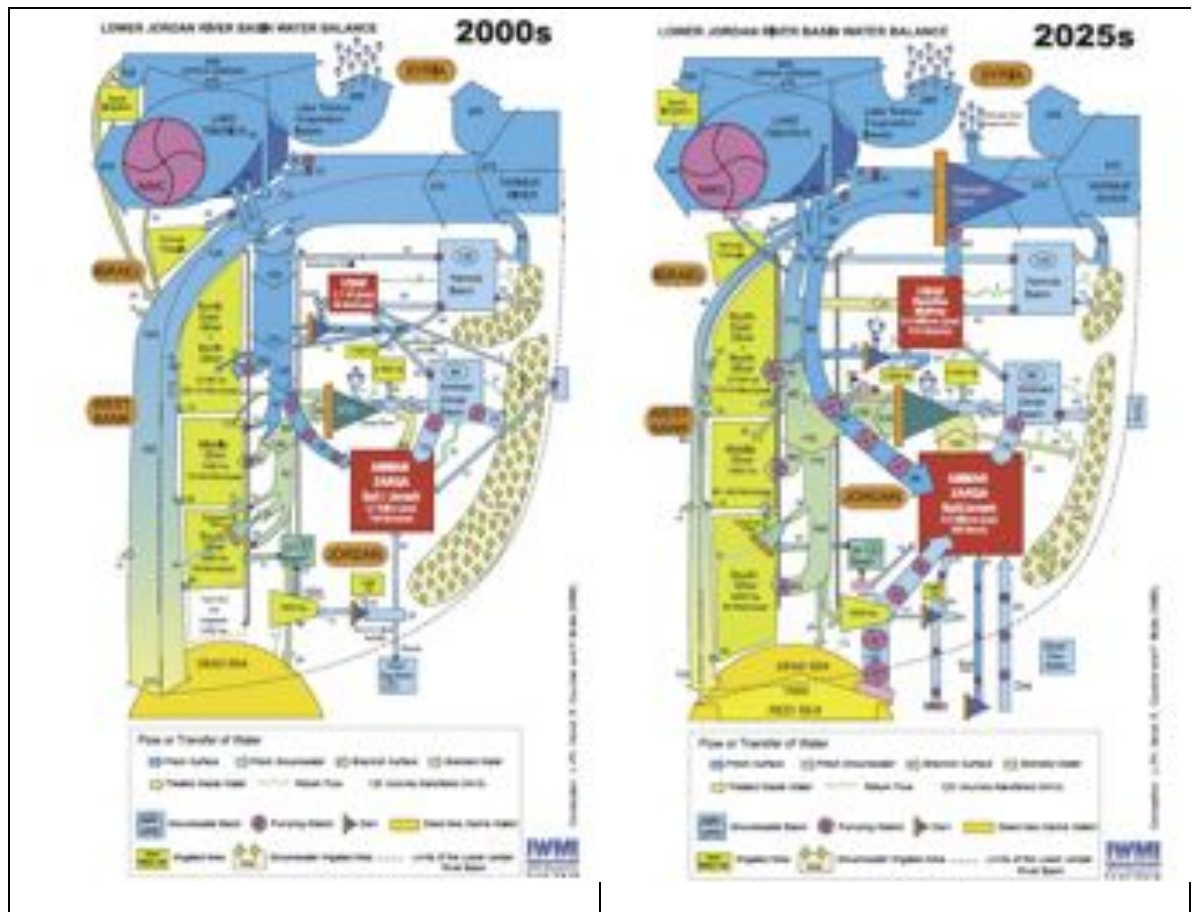
By 2050, the share of water for renewable water per capita is predicted to fall below 93 m<sup>3</sup>/capita/year, which means Jordan would fall under the absolute water poverty level to meet “basic human needs” namely 100 m<sup>3</sup>/capita/year suggested by Gleick (1996; World Bank 2013).

The numbers for Jordan also indicate that there is also a very serious and worsening water domestic water crisis. Agricultural, environmental and industrial water uses are all very insecure.

### **2.5.1. Jordan's "water tragedy"**

Jordan's hydrological history is a "water tragedy" in a highly politicised region. When Jordan was scarcely populated in the 1940s with only 500.000 people, the agricultural sector had sufficient water for mainly rainfed agricultural production and, traditional livestock production - based in this case on rainfed pasture. After the foundation of the Israeli state, Jordan had to share the Jordan basin with its new neighbour. Figure 2.5. showing the lower Jordan river basin summarises the historical and future "blue" water development in Jordan. Jordan benefitted from the displacement of Palestinian refugees from the Westbank to the Eastbank as many of the refugees had farming expertise (Key-Informant #42). From 1950-70, Jordan's agricultural sector was transformed from traditional, nomadic subsistence farming to a modern agricultural sector with many smallholder farmers and few large-scale agribusiness farms. It became a net-exporting agricultural "heavyweight" in the region. Favourable market conditions driven by high demand from the arid Gulf economies led to a further expansion during the 1970s.





**Figure 2.5. Lower Jordan River Basin Balance 1950s to 2025 (projected) (Courcier et al. 2005)**

However, the Jordan river basin is a seriously over-allocated transboundary system with Israel and the Palestinian, as well as Syria and Lebanon, all placing demands on local “blue” water resources. Syria and Lebanon enjoy better water endowments. But Syria has reduced the flow of the Yarmuk tributary by diverting it for irrigation. Jordan’s largest external source of “blue” water, the Yarmouk river, is shared with Syria. The flows of the Yarmouk vary from year to year with levels of below 100 mcm recorded despite models that assume an average flow of 470 mcm per annum (see Figure 2.5.; Courcier et al. 2005; Key-Informant #13).

Hydropolitics have increased the demands on the flows of surface water and the growing water insecurity in all sectors in Jordanian. Rainfall in the winter months can



be as high 850 mm annually in the extreme north of the Jordan. But 85% of the water evaporates and only 50% that which remains can be used productively in rainfed agriculture (Courcier et al. 2005).

### **2.5.2. The failure of donors**

From the 1970s onwards, Jordan could not meet its water for irrigation needs with surface water from the Jordan anymore. At the same time, the irrigated agricultural sector further expanded. Jordan started to access its non-renewable groundwater aquifers without consideration of environmental consequences. All these demands and rapid population growth to approximately 6.4 million in 2012 have led to serious depletion of scarce “blue” water resources.

The first signs of environmental awareness of the consequences occurred when Jordanian decision-makers realised the hydrological consequences of the Oslo Agreement in 1994. The price for peace was a decreased availability of surface water from the river Jordan. At the same time, the aquifers became more saline and more prone to exhaustion.

The environmentally blind capitalist expansion came to a slow halt as foreign donors began to insist that demand-management measures be installed (National Water Master Plan 2004). The tipping point was reached when cities such as Amman faced the risk of water shortages, however, plans to reverse the situation were very strongly opposed by the influential families from within the “shadow state” of Jordan (see Chapter 7). These powerful families with farms in Disi, in the the Jordan Valley and on the plateau used their influential positions close to the “shadow state” to obtain a disproportionate share

of the water (Ferragina and Greco 2008). A serious “principal-agent-problem” came about associated with corruption in the irrigation sector (Huppert and Wolff 2002).

Western donors such as the German *Gesellschaft fuer Internationale Zusammenarbeit* (GIZ) and the *United States Agency for International Development* (USAID) developed governance concepts such as Water User Associations (WUA) for the Jordan Valley with the intent of reducing corruption and increasing water use efficiency. It was hoped that these measures would be the “silver bullet” to solve Jordan’s water crisis.

As a consequence, Water User Associations were developed. These bodies are the lowest organisational level of water management, following a governance model established by Elinor Ostrom (1994) that give farmers the opportunity to decide democratically on water allocation and use instead of allowing a highly politicised institutions such as the Jordan Valley Authority to deliver water to farmers. This approach in practice led to an even greater over-allocation of water to certain influential farmers (Huppert and Wolff 2002). Western agencies such as USAID or GIZ went to the extreme of recommending that farming be abolished in the Highlands. The irrigators have resisted most of the calls for change until today. They hope instead that mega-solutions such as water conveyance and desalination will provide solutions in the long term.

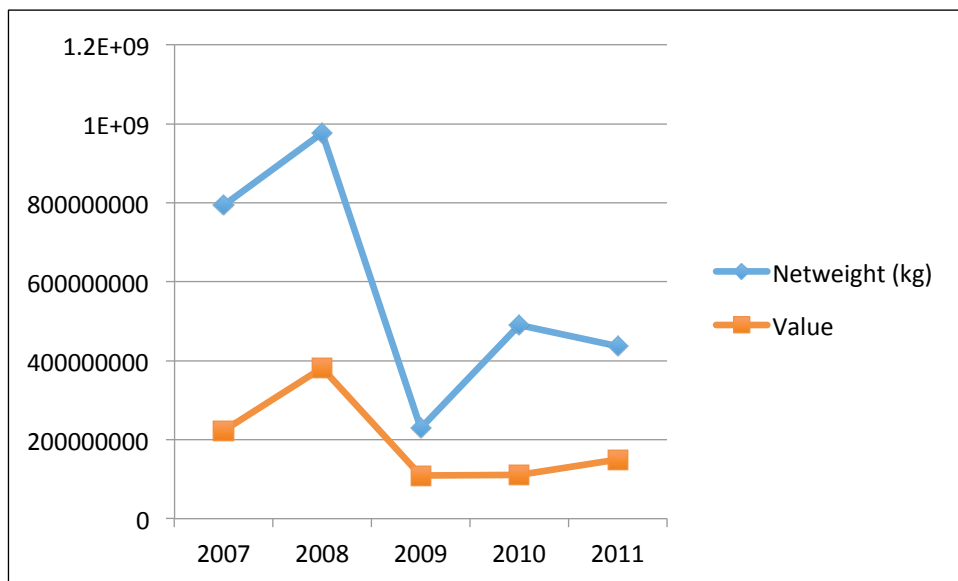
### **2.5.3. Jordan’s food imports**

The Hashemite Kingdom is highly dependent on food commodity imports. to meet food security. Although Jordan is self-sufficient in vegetable and fruit production; it even exports vegetables and fruits. Its major food imports are wheat and meat. Rice and sugar are also important. These commodities are not analysed in this study because they are

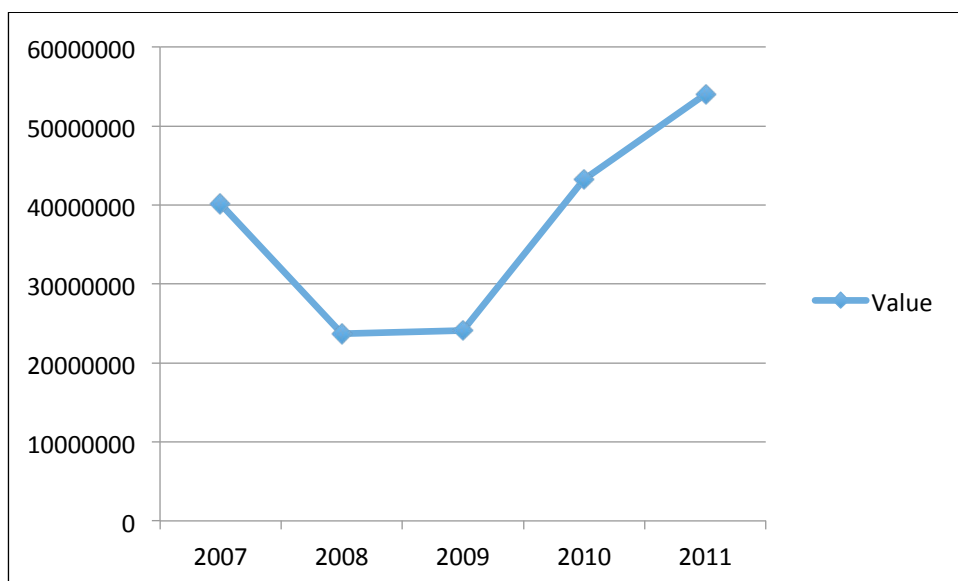
not produced on the Sudanese projects (see Figures 2.6.-2.8.). During the period of 2006-2011, the Jordanian import picture was highly volatile. There was a general upward import trend in live goats and sheep and fresh, frozen and chilled sheep meat. The wheat imports reveal the impact of high prices on Jordanian demand. During the recent price spikes, Jordan decreased its imports of wheat. They fell sharply from 975,748 tonnes to 229,175 tonnes between 2008 and 2009 indicating the extent of the crisis. (COMTRADE 2013). It is however even more important to stress that the import data for Jordan are misleading because of the nature of food trade. In particular the wheat trade is subject to smuggling across borders according to an international agricultural advisor (Key-Informant #35). In Jordan, wheat is a highly strategic commodity because of bread being the main staple of large parts of the population.

Jordan's high volumes of virtual water "imports" confirm the extent of its dependency on global markets. The virtual water "imports" have been on average 5,666 mcm/year for the period from 1996 to 2005 - the period for which data are available (Water Footprint Network 2013).

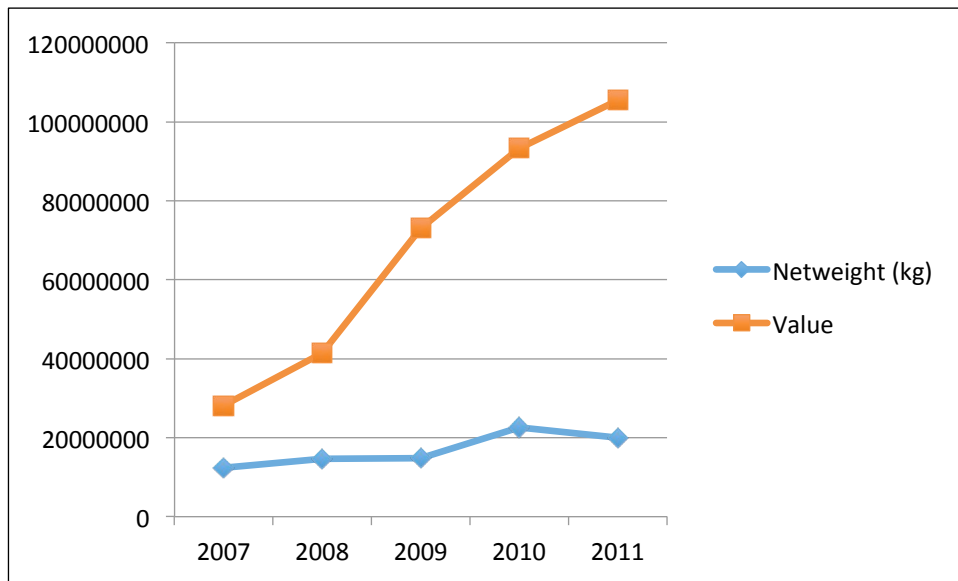
In the same period - 1996-2005, Jordan's virtual water exports averaged approximately 1045 mcm/year (see Figure 2.9.). The resulting water gap was 4,621 mcm/year (Mekonnen and Hoekstra 2011). This water predicament forced Jordan's policy-makers responsible for food security to expand the range of options considered to address these conditions of water and food insecurity.



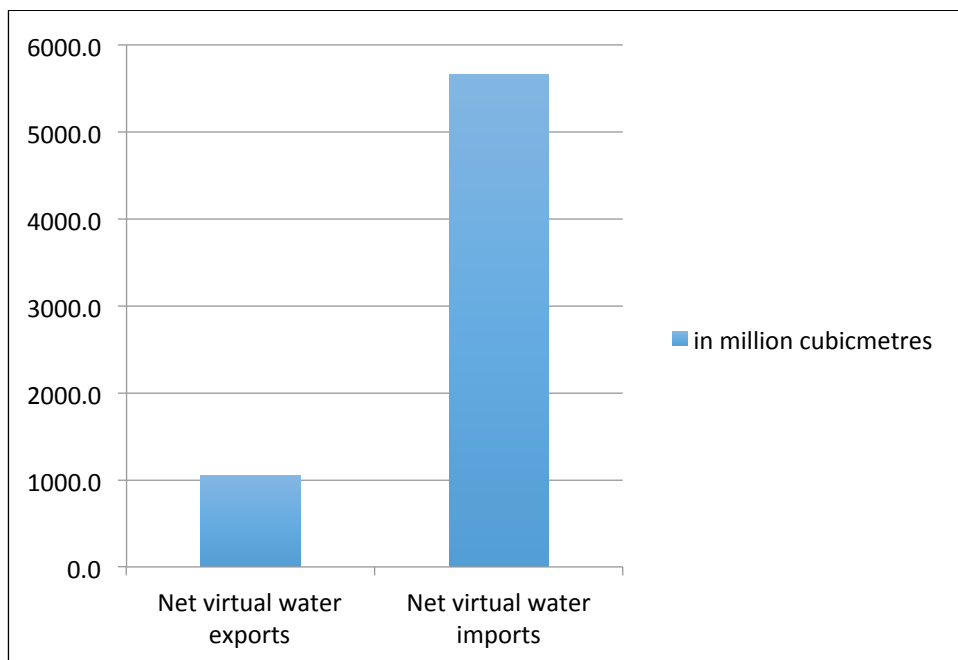
**Figure 2.6. Jordan wheat imports in US\$ value and kg quantity (COMTRADE 2013)**



**Figure 2.7. Jordan live sheep and goats imports in US\$ value (COMTRADE 2013)**



**Figure 2.8. Jordan meat of sheep and goats (fresh, chilled or frozen) in US\$ value and kg quantity (COMTRADE 2013)**



**Figure 2.9. Jordan's net virtual water exports and imports (“blue“, “green“ and grey water) from 1996-2005 in mcm (Water Footprint Network 2013)**

## 2.6. Jordan’s options in the range of choice

In the absence of natural resource rents such as enjoyed by Qatar, Jordan's range of choice are relatively limited. Two out of the three options the country possesses - namely FDI in land and dependence on food imports from the global market are subject to external and internal political constraints over which the government has little control. In contrast to Qatar, pursuing alternatives to current water management plans mark a are very high risk. This predicament is a consequence of the high rate of population growth and the potential political instability in a highly volatile region. The first option reviewed is the domestic option.

### **2.6.1. Domestic option**

As in the majority of countries in the world where irrigated farming has been developed, the in Jordan the biggest water using sector is associated with high levels of water use inefficiency. In the spring of 2011, a team of three McKinsey consultants conducted a study of economic solutions to Jordan's looming water crisis. The consultants concluded that Jordan can make considerable water efficiency gains through improved irrigation management, by introducing more water-productive seeds and improved agronomy, by investment in infrastructures such as wastewater reuse and rainwater harvesting systems for domestic water consumption (2030 Water Resources Group 2011). However, the McKinsey report was not accepted in Jordanian government circles because of its poor grasp of the politics of the reform of water resource management. For example, even a small innovation such as introducing seeds with higher water productivity would first have to be accepted by farmers as a useful innovation consistent with the conditions in which they operated. Since such acceptance could not be guaranteed, the government concluded that the study provided no real policy prescriptions for Jordan (Key-Informant #13).

The study certainly pointed at potential opportunities for improvements especially in demand-side water management through technological innovation in water using sectors. Whether the optimistic assumptions of the McKinsey study can be translated into practice remains questionable. Similar to governance models proposed by other Western agencies, especially USAID and GIZ, the policy prescriptions to increase irrigation efficiency may also face the resistance of farmers and civil society.

Another option for Jordan would be to increase the volume of water available internally through the installation of desalination plants and water conveyance infrastructures (World Bank 2013). Jordan's hopes that there could be engineering "silver bullets" in the form of mega projects such as the Red-Sea-Dead-Sea-Conveyance and the Disi-Amman water conveyor. While the former is still in a study phase supervised by the World Bank, the latter is scheduled to be constructed during 2011-2014 period. The capital costs of the Disi conveyance project have been estimated to be US\$ 1.1 billion. It would pump and convey 100 mcm/year of water for household and industrial consumption. The proposed Red-Sea-Dead-Sea Conveyance would be one of the biggest infrastructure projects outside the gas and oil sector in the region with an estimated cost of US\$ 10 billion if the identified alternative were to be constructed. The final reports (World Bank 2013) showed that only a much reduced infrastructure with a capacity of only 40% of the that of the identified project would be environmentally acceptable. Any project would have to be funded by the international community to solve the municipal water problems in Jordan, the Palestinian Territories and Israel through desalination of Red-Sea water that is pumped to the cities (namely Amman)

with the excess brine of the desalination process intended to fill up the shrinking Dead Sea (World Bank 2013).

The additional water supply to Jordan from a combination of alternatives could be as much as 600 million mcm/year by 2055. The project could extend over forty years but the first phase which could be completed within a decade - if funds could be mobilised - could provide an additional 230 million cm<sup>2</sup>/year (World Bank 2013). Starting such a project would also depend on the willingness of the three riparians to collaborate politically. The World Bank-commissioned studies included a *Study of Alternatives* to the identified Red-Sea-Dead-Sea-Conveyor project. The only acceptable alternative that comprehensively addressed the three objectives - first, restoring the level of the Dead Sea. Secondly, providing high quality desalinated water for Amman, and thirdly installing a symbol of peace and cooperation was a combination of measures. First, the re-use of recycled water. Secondly, the desalination of water mainly at the Mediterranean coast with some desalination at Aqaba. Thirdly, increases in water use efficiency. Finally, the importation of water by tank from Manavgat in Turkey (World Bank 2013). All options would be associated with high political risk in a period of highly volatile regional politics. Both the RSDSC and any alternatives are beyond the scope of this study, which focusses on the virtual water option. The next section presents this trade option as part of the Kingdom's range of choice.

#### **2.6.2. Using of the Jordanian private sector to increase Jordan's trade leverage**

As in Qatar, Jordan has in theory the option to increase its trade share by making use of domestic financial capital. Jordan has federal bank reserves of approximately US\$ 28 billion (Key-Informant #9 and 13), which could in theory be used for increasing its



leverage in international food markets. However, Jordan's geopolitical position is less favourable than that of Qatar as it has access to only one small port in Aqaba which has limited capacity and is not as conveniently located as Doha. The government has therefore dismissed this strategic option but has instead tried to mobilise Jordanian international trading expertise.

Jordanian food producers from the private sector have engaged in international trade for decades and the relatively small scale of the current production and trade could be increased. The largest food producers and traders in Jordan are the Jordan River Company (JORICO), Raja Farms, Al Baraka Farms Co., Developed Agricultural Marketing Company, Progressive Agricultural Investment Company, and Dr. Fayez Sabri Jaber Farms (Fernandez-Stark et al. 2011). Four of them are linked to agribusiness enterprises in Disi, which will be reviewed on in Chapter 7. Expanding the private sector trading option as an element in the theoretical range of choice depends on the willingness of the companies to participate in national and international strategies. As will be shown in Chapter 7, the private sector in Jordan is heavily influenced by "shadow state" politics in which the decreasing availability of agricultural water is subject to internal competition. Finally, there is also the option to invest in overseas farmland.

### **2.6.3 Jordanian FDI in Sudan**

The third option for Jordan in expanding its range of choice has been FDI in Sudanese farmland with the intent of "importing" embedded water in food in order to decrease the pressure on local water resources. Securing imports of strategic food commodities could release scarce water in Jordan for other purposes. The government has pursued this

option since 1999. The task of investment has been given to a military-owned company called Al Bashayer (translated as “the good news”). This company has produced and imported food from a farm outside Ad-Damar approximately 260 kilometres northeast of Khartoum in Sudan where water from the River Nile and the Atbara (the Black Nile) a Nile tributary have provided irrigation water for the project. The major objective of the Al Bashayer enterprise has been to provide imports for basic food commodities such as wheat, livestock, meat and dairy products to supply the poor in Jordan with affordable food.

The Jordanian government sought Jordanian private sector involvement to increase the production on the farm after Jordan was allocated 200,000 hectares of land by the Sudanese government. This area is almost the equivalent to the total cultivated area of agricultural land in Jordan. The Jordanian theoretical range of choice included the utilisation of a tract equivalent to a second Jordanian agricultural sector. This activity could in theory alleviate Jordan’s water poverty through virtual water “imports” embedded in strategic food commodities such as wheat and meat. Jordan would in theory have some control over production and transport costs and thereby reduce its dependence on world markets and their vulnerability to price spikes. The factors that have influenced the investment near Ad-Damar as well as the constraints experienced will be analysed in Chapters 6, 7 and 8. In theory, Sudan could provide Jordan with a whole “virtual water basin” similar to the Jordan basin.

## **2.7. The case of Qatar**

Qatar is located in a geographical location with an arid climate with virtually no rainfall and hardly any surface water. In hydrological terms, the State of Qatar is an absolute

water pauper subject to absolute physical water scarcity. Qatar receives a negligible amount of rainfall - about 100mm per year - confined to the winter months and falling in brief and sometimes heavy storms. In addition, Qatar has access to 0.058 km<sup>3</sup> annually of renewable water largely from groundwater aquifers (FAOSTAT 2013). 8000 people are associated with the agricultural sector that cultivates 15,000 hectares of land. The most recent GDP of Qatar is US\$ 189 billion, which translates into a GDP per capita of US\$ 102 000 (CIA Factbook 2013b).

Qatar had a population of 25.000 people in 1950. Thanks to an oil and gas boom, which generated an estimated US\$ 90 billion net revenues in 2010-11, and the inward migration of professionals and other labour from abroad, the population grew to 1.7 million in 2010 and is expected to grow to 2.6 by the year 2050 (CIA Factbook 2013b). It must be noted that such predictions entirely depend on future economic growth fuelled by fossil energy as the Gulf state is dependent on oil generated revenues and non-Qatari high- and low-skilled labour to keep the economy growing. The construction sector in the economy heavily relies on low-skilled and semi-skilled foreign labour that generates substantial demand for the import of staple foods. At present, the 1.7 million population in Qatar uses an average of 1200 litres of water per day for domestic, industrial and recreational use, which is the highest consumption rate in the world. For drinking water purposes, Qatar has an emergency storage of only three to five days (Key-Informant #3).

Most of the current fresh (“blue”) water supply is sourced from seven desalination plants, which produce 1.25 mcm per day of water. The Qatar General Electricity and Water Corporation (Kahramaa) commissioned two desalination plants in 2011

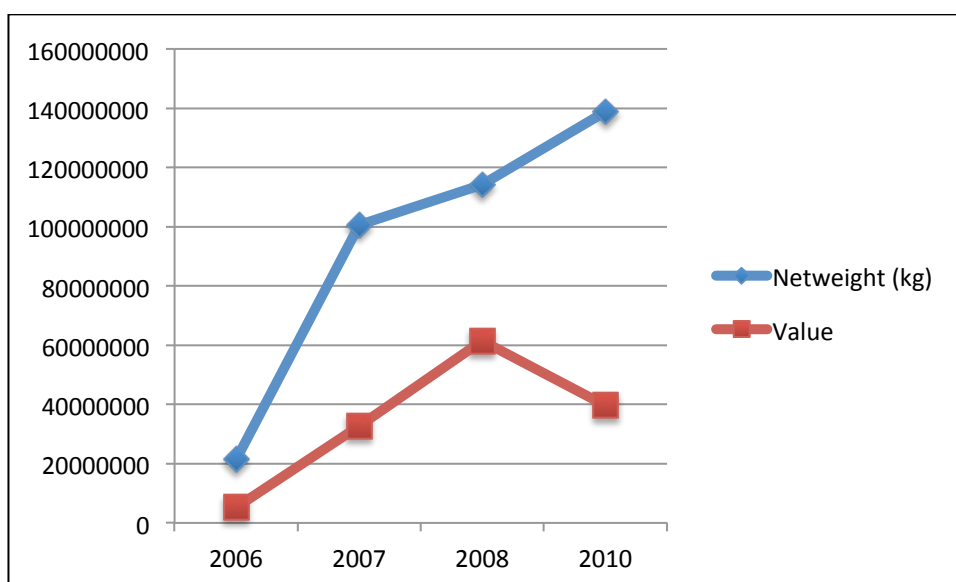
providing approximately 550.000 mcm/day for domestic, industrial and recreational use that is 1.1 mcm/day current use is expected to double by 2020. The costs of one desalination plant supplying approximately 280 mcm/day cost US \$3.9 billion (Siddiqi 2013). Although the domestic water use in Qatar is eight-times higher than in the United Kingdom, water desalination for domestic purposes alone accounted for approximately US\$ 20 billion of capital costs to provide the population with water for drinking, showering, cooking and recreational use. Data on grey water, that is water that could be re-used after treatment do not exist from Qatar. Water re-use will provide substantial volumes for a wide range of uses in future. In the GCC economies the status of water services is alarming and the water services and sanitation challenges have only partially been answered. More investment will have to go into desalination plants to meet the needs of the growing population.

## **2.8. Qatar's food and agricultural question**

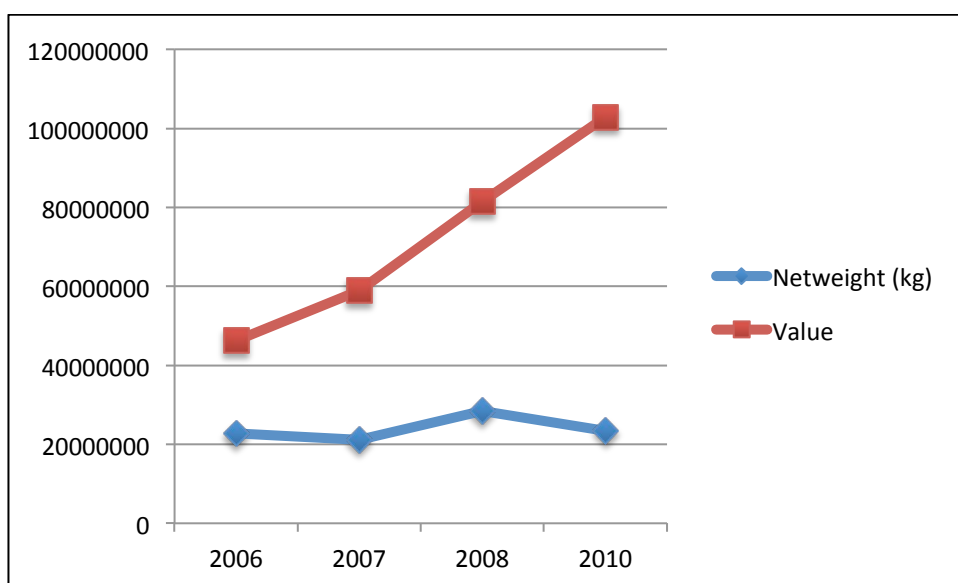
The 70 per cent of water consumed by irrigated farming are not included in the above numbers for the Qatari water sector. Data on food consumption in Qatar confirm its dependency on agricultural imports. Qatar imports 90 per cent of the food sold in Qatar's markets and purchased by its 1.7 million inhabitants. Qatar is in terms of its per capita food imports one of the most food dependent economies in the world. By gross value and quantity, Qatar is only a minor actor in the global agricultural trade system. Figures 2.10. to 2.12. indicate the value and quantities of wheat, live sheep and goats, meat of sheep and goats (fresh, frozen or chilled) that were imported between 2006 and 2010. It is evident that the imports for rice and sheep and goat meat (including live animals) gradually increased as a result of a growing and increasingly affluent society. However, even if commodity imports such as wheat decreased, import costs still sharply

increased. The import costs almost doubled for selected commodities. The prices of Qatar's food imports may not hurt its affluent society, but the upward trend is threatening.

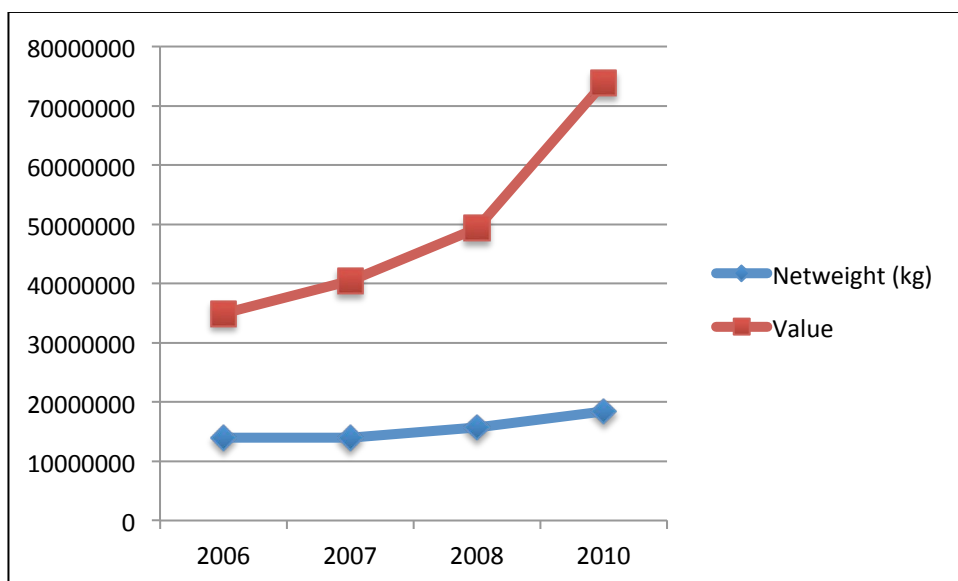
Domestic agricultural production is not a short-term option due to severe water constraints and the absence of technologies to produce crops with very limited water. Although no data are available imports used in this study are available, the virtual water "imports" of Qatar in the period from 1996 to 2005 have accounted for 1057 mcm/year (see Figure 2.13.), which is approximately one hundred times of water desalinated to provide Qatari citizen with domestic water services. As observed in the first chapter, the analysed commodities wheat, sheep and goat meat are very water-intensive. Water is the main limiting factor in Qatar. The next section provides the background information of the options in the theoretical range of choice for decision-makers in the State of Qatar possess in order to achieve food security.



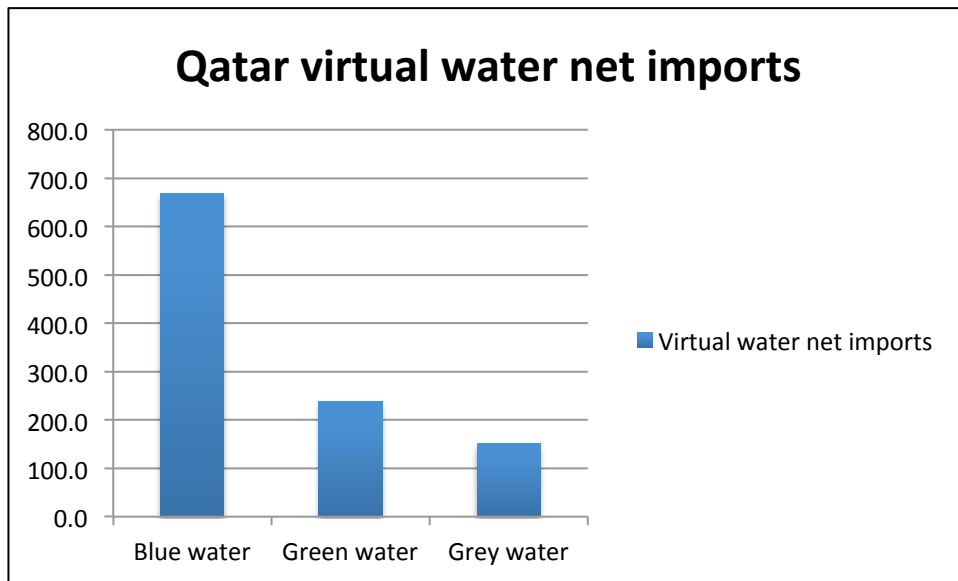
**Figure 2.10. Qatar wheat imports from 2006-2010 in US\$ value and kg quantity (COMTRADE 2013)**



**Figure 2.11. Qatar live sheep and goat imports in US\$ value and kg quantity (COMTRADE 2013)**



**Figure 2.12. Qatar meat of sheep and goats import (fresh, chilled or frozen) in US\$ value and kg quantity (COMTRADE 2013)**



**Figure 2.13. Qatar net virtual water imports in mcm per year (Water Footprint Network 2013)**

### **2.8.1. Qatar's options in the theoretical range of choice**

As the previous section has shown, Qatar's water resources for agricultural production are at present negligible because of severe physical water scarcity. In this section, other alternatives to achieve the goal of food security in Qatar will be explored by reviewing the alternatives within the theoretical range of choice of all options available to Qatar. Given its economic oil revenue based power Qatar is a unique case in the global political economy of agriculture. With oil and gas revenues that will be available for another 50 years, the Gulf economy has three options by which to enjoy food security whilst at the same time decreasing its trade dependency triggered by water scarcity.

### **2.8.2. Increased domestic production**

The first option within the theoretical range of choice is the expansion of domestic agriculture through capital investments in local farmland. Such activities would require investment in desalination plants. Qatari decision-makers have developed a food security strategy since 2008 that envisions food to its citizens through domestic production. The goal of the Qatar's National Food Security Programme is to increase investment in domestic water resource development from the current 4 per cent to 10 per cent. Together with investments by Qatar's Sovereign Wealth Fund, the aim is to achieve a version of food security with a substantial proportion of local food production by 2022. Agricultural production in Qatar will be based on desalinated water powered by renewable energy plants. The plan is to use the water produced on local farms to produce 60 per cent of the food needs of Qatar (see Figure 2.14.). Together with the Qatar Environment and Energy Institute, research in domestic agricultural production is in train to test soils, pesticides and fertilizers that can provide higher yields. In addition, greater efficiency in the food supply chain is viewed to be complementary in the coming ten years by reducing waste. The increase in food supply chain efficiency would take place through collaboration with local supermarket chains to reduce high current levels of waste. No figures for current waste levels are available but decision-makers hinted at waste levels higher than in Western countries, where at present approximately 50 per cent of food is wasted due to poor efficiency levels in food supply chains (Key-Informant #1; IMECHE 2013).

A major problem of this option is its cost. The cost of domestically produced food supplies have been estimated to cost approximately \$ 500,000 a hectare, which may add up to several hundreds of billion US Dollars to produce 60 per cent of Qatar's food (*The*



*Financial Times* 2011). Qatar may be able to afford this costly alternative. The other cheaper options will be presented next.



**Figure 2.14. Qatar National Food Security Programme sustainability matrix (QNSFP 2011)**

### **2.8.3. Expansion through trade share increases**

The second option in the theoretical range of choice of alternatives that Qatar can pursue is to overcome its minor position in global trade through artificially increasing its economic leverage. There is a theoretical potential for Qatar to become a leading agricultural trade hub in the Middle East. In this role Qatar would have substantial local leverage and a globally significant position. However, the decision-makers in Qatar are aware of the risks such a project would involve. Regionally, Qatar has launched an initiative called the “Global Dry Land Alliance” (GDLA) to promote the understanding

of the challenges facing the economies that endure the constraints of low endowments in rainfall and natural water. A potential target basin with some potential returns from well directed inward investment in water and land is the Euphrates and Tigris basin, which extends over Turkey and Syria and Iraq (Doha Declaration on Food Security 2012).

An FAO technical expert was given the task of developing the 2012 Doha Declaration on Food Security that was signed by several ministers from Africa and the Middle East during the Conference on Food Security in the Dry Lands in Doha on 14/15 November 2012 (FSDL website 2012). The declaration aimed to promote investment in agriculture in drylands and in infrastructures such as storage, food processing, marketing, and trade in both the Middle East and Africa in an ethically, environmentally and commercially “sound” way. It does not provide further details on how these intentions are going to be implemented (Doha Declaration on Food Security 2012).

Qatar’s international strategies remain opaque since no further follow-up steps have been taken. The Government of Qatar is attempting to influence the G20 leaders to put food security in dry land regions on the agenda over the coming years. Qatar intends to play a leading role in these activities (see Chapter 6).

Making use of the immense capital surplus of the Qatar economy is another way to expand its range of choice in global agricultural and marketing systems by financing, and hedging, in food commodity markets where food commodities grown in the global “food bowls” in North America, Latin America and Asia. As the following chapter will

show, this approach would require Qatar to collaborate with the global food regime to access the food supply chains that extend from water-abundant regions.

The disadvantage of this second option is that it does not provide real security because Qatar would be still dependent on imports from global markets. This option is also dependent on future revenues from gas and oil exports, but it is one option for Qatar as long as long as it enjoys exceptional energy resource endowments in a global market environment of high energy demand. As with the first option, food hedging is only an alternative within the theoretical range of choice for a rich economy such as Qatar. The first and the second options of the theoretical range of choice are not the concern of this study. The third option - inward investment in land in Sudan - will be explored in the next section.

#### **2.8.4. Foreign direct investment in land and water resources**

The third option for Qatar to expand its range of choice is investment in land in countries with well-endowed water resources and soils. According to the *farmlandgrab.org* website, which collects and published media articles on FDI in agriculture, Qatar has been identified as one of the most active investors in overseas farmland across the world (*farmlandgrab.org* website 2013).

The agricultural investment wing of the Qatari Sovereign Wealth Fund, Hassad Food, has been given the task of identifying opportunities for FDI in regions with agricultural comparative advantages. It will be shown later in this chapter that FDI in land takes places in what Hoff et al. (2013) have identified as “under-utilised” or “marginal” land. These are regions such as Sub-Sahara Africa, Latin America, North America, Eastern

Europe, Australia or East Asia where the agricultural sectors have not reached their potential and where natural resources are in theory available for agricultural production. Qatar has been associated with investments in all these regions. However, it is important to note that most of the media reports as reported by the so-called *Land Matrix* must be treated with extreme caution. Implementation has been achieved on a very small proportion of the areas listed by NGOs and the media. FDI in agriculture in regions with currently low yields is a high-risk activity as a consequence of the numerous challenges outlined in the introduction. The study will return to these potential limitations in Chapter 8.

Investment in land is the concern of this study. It will focus on FDI in the project with which the Qatari state has been associated through direct involvement. The investment of concern is located in Abu Hamad in in Nahr an-Nil state. There follows a review of the water and land resources in Sudan, and the nature of investments in them since the late 1990s.

## **2.9. Water availability and agricultural FDI strategies in target economies**

The poor water endowments and limited capacities of Qatar and Jordan have led them to expand the range of options from which to choose in enhancing their food and water security. The next sections will outline the water situation and the viability of opportunities in target regions in Sudan. This section will be pivotal in the analysis at a later stage of this study as a basis for the discussion of the role of *experience* - investing, agronomic, technical and organisational - in the theoretical and practical range of choice of water management available to Jordan and Qatar. This review draws on the past failures of investment in water and land in the regions being considered for inward

investment, which is subject of this study. The past experiences will be presented in Chapter 3. The following sections outline the environmental opportunities for expanding the range of choice to virtual water “imports” from Sudan.

The purpose of this section is to show that conditions are diverse in Sudan, which has been chosen as the case study target country in this study. The general position in East Africa is that the economies are prone to economic water scarcity as opposed to physical water scarcity. After decades of under-investment and simultaneous population growth, the agricultural sector in Sudan would require billions of US Dollars to utilise its potential. The tracts attracting the interest of investors have many environmental conditions that will complicate the development of both rainfed and irrigated farming. Attention will be given in the next section to the constraints associated with soil type and agricultural potential.

### **2.9.1. Sudan**

Sudan is the destination country for Jordanian and Qatari investment in Africa is, where the vast majority of Middle Eastern investment has been channelled (Deininger et al. 2009; Verhoeven 2013; Woertz 2013a; Woertz 2013b). The land that has partly begun to be developed by Jordan and Qatari investors has been allocated without payment in Nahr an-Nil state for 99 years. According to a senior official at the Investment Unit in Khartoum, investors have to provide evidence every three years of “some” activity. Such activity can range from very small interventions to the actual implementation of projects. The land allocation procedures date back to the late 1990s but despite no signs of activities by countries - for example Syria, no land has been claimed back by the government (Key-Informants #21 and 22).

The main driver of this inflow of Arab capital has been the Al-Nahda Al-Zira'ayah (the Agricultural Revival) strategy. In the Executive Programme of the Agricultural Revival in Sudan (2008), the strategy is described as:

*Making rational use of the huge and diverse resources of the Sudan has been an unfulfilled promise and an outstanding challenge. Since the early days of Independence, successive plans and strategies to develop agriculture have been implemented. However, these plans had a limited success in achieving their objectives. The main reasons for the frustration of the agricultural development plans are: the low priority assigned to agriculture in the allocation resources, lack of political stability, the top-down approach to development which reduced rural producers to policy-takers rather policy-makers, and the weak administrative and implementation capacity of the government machine (Action Plan for Agricultural Revival Programme 2008).*

As Verhoeven stresses, this strategy has its ideological foundations in the Islamist (Al-Ingaz) Sudanese decision-makers' view that the Sudan could be one of the top three agricultural producers in the world (Verhoeven 2013). The aim is to reverse the under-investment in the primary agricultural sector and to mobilise the potential of land as well as of rich solar energy, local labour and water. The goal is to rapidly transform the traditional smallholder-based sector into a "modern, dynamic commercial sector responding effectively to local and global changes" (Verhoeven 2013). The intention is to implement such plans by fully utilising Sudan's share of the Nile and thus making use of the 18 billion cubic meters (bcm/year) annual flow of the Nile allocated to Sudan by the Nile Treaty of 1959.

Sudan's new agricultural strategy also focuses on the country's "green" water availability in the middle and southern part of the country. However, the lion's share of the water that is targeted for use for the "revival" of the agriculture in Sudan is "blue" water. The public discourse is on the creation of "win-win-situations" whereby Sudan uses Arab investments to feed the water-scarce economies of the Middle East (Verhoeven 2013; Verhoeven and Woertz 2012).

An important issue that impacts these proposals and which will determine their feasibility are Sudan's poor relations with Western countries. These have severely impeded the economic development of Sudan since 1997, when President Bill Clinton issued a trade embargo through the Executive Order 13067. The embargo was initiated as US leadership believed that Sudan was supporting terrorist organisations and thereby destabilising neighbouring countries and violating human rights (*Title 31 Part 538 of the U.S. Code of Federal Regulations and Executive Order* 2007). As a result, foreign assets of Sudan were frozen and trade relations with the United States became increasingly restricted. The European Union also imposed sanctions on Sudan after 2005 at the height of the Darfur conflict. President Al-Bashir has been accused of human rights violations and an accusation against him was brought in the International Courts of Justice in Den Haag (Holt and Daly 2011). To date, economic and political sanctions on Sudan have not been removed, hence international trade agreements are limited to non-Western countries. This explains why the Sudanese agricultural strategy welcomes FDI from the Islamic world and why new economic powers such as China with which Sudan has normal trade and diplomatic relations are also welcome.

The current political-economic rhetoric relies on the assumption that Sudan has fertile soils, abundant water and sufficient sunshine. The review will show that the climate of Sudan ranges from a northern arid desert to marginal humid sub-tropical conditions. Both the northern and southern regions of Sudan have a comparative advantage with regard to sunshine. Climate change predictions assume the arid conditions will expand in the north. Climate models are ambiguous regarding what will happen with respect to rainfall in the south of Sudan (UNDP 2012). The climate of Sudan ranges from arid temperate zones in the north to tropical climate in the southern part.

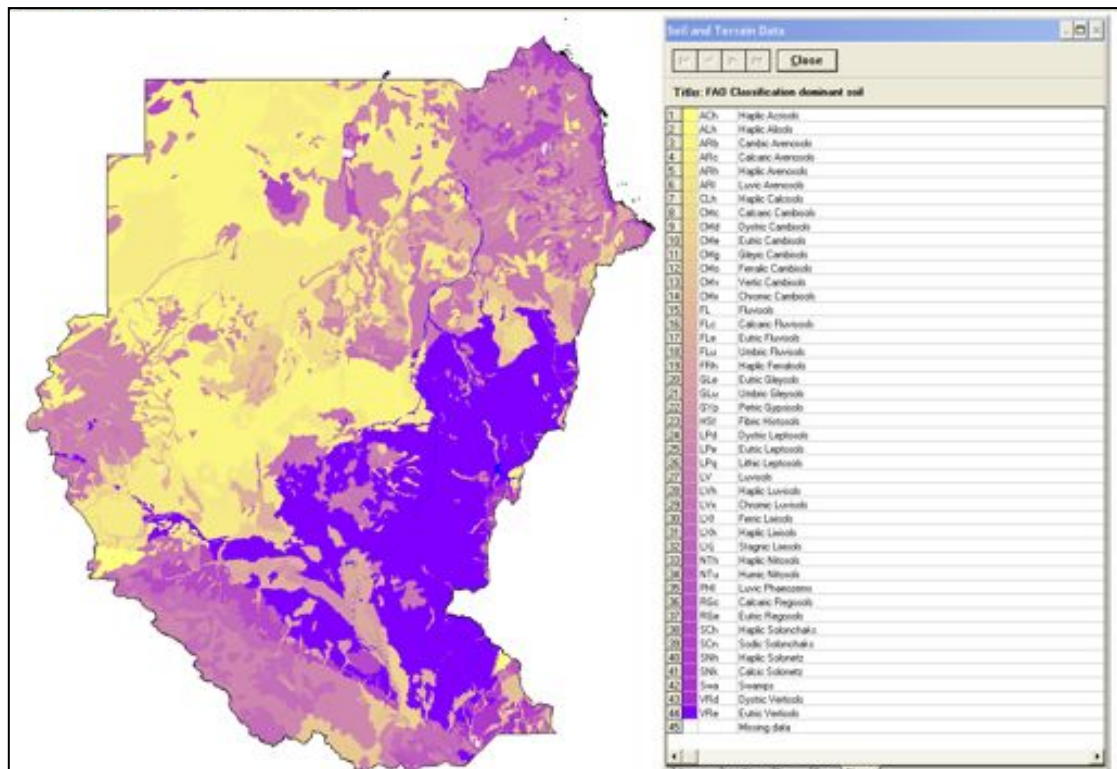
The climate zone of interest for Qatari and Jordanian investments is in the northern part of Sudan where all of the land allocated to Islamic investors is located (Key-Informant #21). The arid part of the north receives almost no rainfall. There is no “green” water potential for agricultural purposes. The land in Nahr an-Nil state can only be made productive with “blue” water from the Nile and its tributaries or with groundwater. According to a Qatari Key-Informant, the water resources to be used are Nile waters from the remaining full share of Sudan’s water quota of the Nile treaty (Key-Informant #2). According to FAO, Sudan’s total natural renewable water resources are estimated to be 64.5 bcm/year (AQUASTAT 2012). However, only a fraction of this volume is potentially productive, hence decision-makers emphasise the irrigation potential from “blue” water of Sudan (Key-Informants #21 and 23).

Sudan does have favourable growing seasons. The northern part of Southern Sudan enjoys a length of growing period of 120-179 days per year. In the south the length of growing period is between 180-282 days. However, the soil fertility in the northern parts is poorly suited for many types of agricultural activity (Key-Informant #36). The



UN Food and Agriculture Organisation (FAO) classification of the soil in the north assesses the land as prone to the development of Acrisols, Arenosols, Nitisols and Leptosols (see Figure 2.15.). The management and use of all three types of soils requires special measures requiring close attention to the soil conditions. Farming is possible on these soils but the threat of overuse, negligence of soil deterioration and erosion all persist. Acrisols are clay-prone soils suitable for production of rainfed and irrigated crops only after liming and full fertilization (FAO 2009), Arenosols in humid areas are sandy soils best left under natural vegetation such as forest cover. If cleared for agricultural purposes, Arenosols turn into bad lands without any ecological and economic return. The most available soil type is the Leptosols, which are particularly prone to erosion if overused, over-irrigated or otherwise degraded. The best use for Leptosols is for forestland and wet season grazing (FAO 2009).

Sudanese soils should thus be treated with caution. Emphasis on high returns without taking into account the vulnerability of the soils may lead to dismal farm development outcomes. Most soils have therefore poor agricultural potential (Key-Informant #36). In particular, mechanised farming can have detrimental consequences for agricultural production if practices do not match the requirements of the natural habitats. These local conditions require greater use of fertilizers if these tropical tracts are to provide economic yields. Since investors intend to maximise their annual returns, the environmental risks may have very negative impacts. “Dust-bowls” may occur as a result of poor agricultural practices by farmers (O’Brien 1985).



**Figure 2.15. FAO soil map for Sudan (FAO 2010)**

### 2.9.2. Two case studies

In order to analyse the practical range of choice for Qatari and Jordanian decision-makers, two case studies will be analysed to scrutinise the risks and opportunities of creating a “virtual water basin” for economies such as Jordan and Qatar in East Africa. As noted already, Qatar and Jordan have already directly invested in Sudan.

The two projects are shown in Figure 2.16. Abu Hamad is the intended Qatari project in Sudan depicted as the most northern project. It is supposed to be operational by 2015 to produce wheat, animal feed in the form of alfalfa (Lucerne) and livestock in the form of sheep meat. The Jordanian project Ad-Damar is the second from the top in this map. It has been operational since 1999. Wheat, alfalfa and livestock in the form of sheep has been produced since the end of the last century. Figure 2.17. shows the road

infrastructure. The Jordanian project relies on trucks to move the produced food to the shipping point at the Red Sea in Port Sudan; the Qatari project has access to a railway line to Port Sudan, which is not shown on Google Maps.

The two projects in Sudan are of interest, as they require “blue” water as the main input for agricultural production. “Blue” water is already over-allocated in the Nile Basin Chapter 8 will illustrate the associated risks of a reliance on “blue” water for expanding the range of choice to farmland investments. The case studies will enable the study to compare the environmental, political and social risks of opportunities to expand the theoretical range of choice to farmland investments in Sudan.



**Figure 2.16. The two case study projects in Abu Hamad (blue) and Ad-Damar (red) from satellite view (Google Maps 2013)**



**Figure 2.17 Two projects in Abu Hamad (blue) and Ad-Damar (red) infrastructure map (Google Maps 2013)**

## 2.10. Concluding remarks

The evidence presented in this chapter shows that investments in land have been triggered by severe natural water deficits in Qatar and Jordan. The intent to invest increased in both Qatar and Jordan as a consequence of the volatility of global food prices after 2008. The food price spikes of 2007/08 and 2010/11 marked a “tipping point” that highlighted the need of the two economies to expand their theoretical range of choice in the area of meeting their food security, which could not be based on local natural water.

The impact of the food price spikes on food imports for both economies have been presented to show why decision-makers are considering alternative options in the ways they evaluate, manage and substitute for water to secure food.

The three main options of each country to expand the theoretical range of choice have been illustrated. The option, which is the focus of this study, of FDI is investment in African farmland - specifically in Sudan. The chapter has emphasised that a food trade dependency resulting from physical water scarcity has prompted decision-makers in both economies to expand their theoretical range of choice to target “virtual water basins” with irrigated crop production potential in Sudan.

The information provided in this chapter will underpin the analysis of the water and trade option. It has provided essential data and information on natural resources. It has also explained the rationale of the range of choice framework, which structures the study. However, the theoretical range of choice is not without limitations (White 1968: 82). There are other factors that influence the theoretical range of choice. Choices can be enhanced and limited by international and domestic conditions and especially by the politics intrinsic to global food supply chains. In addition there are cultural, political and environmental factors that determine the pace of development in target economies, which will be analysed in the empirical chapters 6, 7 and 8. The next chapter will introduce the historical background and current debate around land investments in developing countries such as Sudan. Expanding the range of choice to agricultural investments is not a new phenomenon, because it has been tried before in the 1970s. The next background chapter will therefore shed light on the practice of concern, farmland investments.

# **CHAPTER 3:**

## **A WAY OUT OF THE CRISIS? PAST AND PRESENT ATTEMPTS OF AGRICULTURAL INVESTMENT**

### **3. A WAY OUT OF THE CRISIS? PAST AND PRESENT ATTEMPTS OF AGRICULTURAL INVESTMENT**

*“There is a risk of creating a neo-colonial pact for the provision of non-value-added raw materials in the producing countries and unacceptable work conditions for agricultural workers” (Jaques Diouf, former Director General of FAO in the Financial Times 2008).*

#### **3.1. Introduction**

The second background chapter addresses the identified policy option of concern: namely, farmland investment in Sudan. The material reviewed is crucial in highlighting the complexities integral to the process of expanding of the range of choice of policy-makers and investors in Jordan and Qatar. After the previous chapter introduced the environmental and socio-economic conditions in Jordan and Qatar, the chapter reviews what has been tried in the past and how the international research community has critiqued current farmland investment activities. The literature on past and current attempts will inform the following empirical analysis of the range of choice framework deployed in Chapters 6, 7 and 8. Understanding the international and domestic drivers of the expansion of the theoretical range of choice to farmland investment is an essential basis for the analysis of this expansion reviewed in Chapters 6 and 7. It is also important in explaining the impacts of farmland investments analysed in Chapter.

The chapter is structured into two parts. First, an account of past attempts to expand the range of choice in the Middle East by investing in Sudanese farmland will be provided

to show that farmland investments are not a recent social phenomenon. Although Jordan and Qatar did not unilaterally invest in Sudan in the 1970s, the chapter introduces the background literature to explain that pragmatic responses to water scarcity through farmland investments were considered by a number of Middle Eastern decision-makers forty years ago. The chapter also explains why past attempts to expand the range of choice through investment failed as a result of political factors that may be still valid today. Second, the extensive recent literature on “land grabbing” will illustrate how the current contentious plans of Jordan and Qatar are perceived by the international development community. This literature on current investment trends is important to provide the bigger picture. It also provides the arguments being made for investment in farmland and the arguments that highlight the perceived risks and impacts of the process in Sub-Saharan Africa. The next section reviews the historical literature on farmland investments in Sudan.

### **3.2. Past attempts**

As mentioned in the introduction, agricultural investment in Sudan by Middle Eastern countries is not new. During the food commodity price spikes of the 1970s, the range of choice was expanded in the Arab world as a basis for a regional food self-sufficiency plan. Farmland investment in Sudan was seen to be a pragmatic and feasible remedy to food insecurity. In contrast to their Egyptian neighbours a few hundred kilometres downstream of the Nile, who developed their agricultural sector thousands of years ago, Sudan never developed its agricultural potential despite alleged fertile soils and access to water (O’Brien 1981).



As a result, and as a response to chronic under-investment in agriculture, Sudanese decision-makers began to use the term “breadbasket” about Sudan in the 1970s to describe Sudan’s rainfed and irrigated agricultural potential embraced by the economic strategy of the alleged socialist regime under President Gaafar Muhammad an-Nimeiri (Verhoeven 2013, Woertz 2013a; Woertz 2013b; Kontos 1990; O’Brien 1981, 1983a, 1983b, 1985; O’Brien and Gruenbaum, 1991; Osterdieckhoff 1981; Osterdieckhoff and Wohlmuth 1983). This strategy invoked a restructuring of production and trade to take advantage of regional Arab division of labour (Osterdieckhoff and Wohlmuth, 1983: 35). The Nimeiri regime’s assumption was that Sudan had some 200 million feddans (1 feddan=0.42 hectares) of arable land ready for agricultural production using rainfed agriculture (mainly in the southern part) and irrigated agriculture (in northern Sudan) by utilising its allotted share of the Nile (O’Brien 1981).

Decision-makers across the Arabs world shared the assumption of Sudan’s agricultural potential. The Arab Authority for Agricultural Investment and Development (AAAID) was established in 1976 to channel investment into Sudanese farmland. The original objective of the company was to invest into the Sudanese “breadbasket” with Arab capital. Its initial shareholder base was composed of twenty member states (Saudi Arabia, Kuwait, United Arab Emirates, Qatar, Jordan, Palestine, Comoros, Iraq, Egypt, Syria, Yemen, Sudan, Mauritania, Algeria, Morocco, Somalia, Tunisia, Oman, Bahrain, and Lebanon). The main shareholders of the still existing company are Saudi Arabia 22.5 per cent; Kuwait 19.5 per cent; UAE 15.0 per cent; Iraq 15.0 per cent; Sudan 15.0 per cent; Qatar 7.5 per cent; Egypt 3.0 per cent and Algeria 1.5 per cent. All other investors own less than one per cent of the shares. The share capital is 100.35 million Kuwaiti Dinars (the equivalent of approximately 335 million US Dollars). The AAAID

board of directors and its management are appointed on a political basis by the member state governments (Key-Informant #7). However, the main objective of the company is to provide food security for the Gulf economies not the rest of the Arab world as one representative admitted. Less economically strong Arab countries were convinced in the 1970s - during the early days of the joint venture - to join the venture to benefit from the development of farmland as well as from the development of food processing industries in economically weaker Arab countries. The strategic objective was to invest in the untapped potential of regional agriculture with a focus on Sudanese farmland (Key-Informant #7).

In 1977, only 8 per cent of Sudan's total farmland availability was under cultivation, evenly divided between subsistence agriculture and large-scale production units. The financial investment in the 1970s came from the oil-rich Gulf States and other Arab neighbours. After pan-Arabism's decline in the late 1960s, the "breadbasket strategy" endured as an Arab development strategy. Keen optimists expected Sudan to increase production far beyond internal demand by 1985, through a 200 per cent increase in oilseeds production, and 1070 per cent increases in meat and fish production, 810 per cent in grain, and 19 per cent in hides and skins. The land to be utilized was located in the central and western savannah, which was judged to be under-populated "fallow land" by the Sudanese decision-makers (Oesterdieckhoff and Wohlmuth 1983: 47).

Perceptions of Sudan as a potential "food bowl" to the Arab world existed prior to the 1970s. The first investment dates back to the 1920s when the British funded the Gezira scheme. Gezira was later described as an attempt by the British to leave behind a capitalist legacy in Sudan's agricultural sector after they extended independence to

Sudan in 1956. As Gaitskill (1956) described it: “*We were the "Nannies" and the people were the children in the nursery*” (emphasis added). British capital financed a massive irrigation scheme to produce cotton, fodder and wheat, which in return was supposed to deliver returns for the investors. Gaitskill concluded: “*Our (the West’s) traditional belief in freedom and rational tolerance but tempered and disciplined to give the equity and efficiency which our over-populated world now necessitates*” (emphasis added).

The British were the first inward investors in a commercial, large-scale agricultural project in the Sudanese state of Al Jazeera close to Khartoum. Although wheat was initially targeted, the main crop to be grown was cotton after it was discovered that the latter could be grown effectively and traded competitively (Bernal 1997).

High expectations mark the story around Sudan’s agricultural potential. Politicians in Sudan perceived large-scale agricultural production as a major trigger for economic development of a “modern Sudan” (Bernal 1997). Gaitskill and post-independence politicians in Sudan gratefully included the “breadbasket” narrative in their political agenda. The potential conceived by the British in the 1920s, was later followed up by the Nimeiri regime in the 1970s. In a combination of socialist planning and capitalist farming methods, the five-year agricultural plan in 1977 established a concept to promote mechanized large-scale farming. The untapped agricultural “treasure” across Sudan was to be enabled by foreign direct investment by mainly Arab investors.

Limited water availability was not seen to be a grave challenge to such plans. In addition, the staple commodity wheat was hit by high price volatilities in the 1970s.

Arab societies have high wheat consumption patterns, and Sudan was believed to have the capacity to provide the supplies needed by the Arab economies. It was believed that there was a “win-win” situation for both the investors and for Sudanese partners. In exchange for funds generated by Arab oil rents, the Sudanese partners would provide

cheap labour, land and water to help the whole Arab world to become food secure. Alongside international funders, Arab investors poured US\$ 2 billion into Sudan's agricultural sector (Kontos 1990: 649).

The "breadbasket strategy" became a significant political message of the time and it helped the Nimeiri regime to remain in power. However, the "assumed" win-win situation turned out to become what Verhoeven terms "poised" (2013). Despite high-flying expectations, the results of Arab investment into Sudan were very disappointing. Farm productivity stagnated and export earnings declined. Sudan was economically dependent on agriculture and negatively impacted by these initiatives. Agriculture accounted for 40% of gross national product. As oil sources were only discovered in the 1990s, Sudan depended for 90% of its export revenues on agriculture in the 1970s and 1980s (Kontos 1990: 649; Verhoeven 2013).

### **3.3. The role of Sudanese politics**

Until the 1960s, Sudan pursued an unusual development strategy that aimed at strengthening the demand-side by supplying internal markets rather than export production. Since the 1970s, the strategy of the Nimeiri regime was to expand export production through command economy methods. It proved to be a contradictory strategy. By combining the "worst of the two worlds" (Woertz 2013a), "five year plans" and a capitalist mode of production, the regime tried to obey the policy emphasis of Western agencies, the International Monetary Fund (IMF) and the World Bank but at the same time attempted to keep a tight grip on the economy (Woertz 2013b). Arab inward investment accelerated the export-oriented food production trend proposed by international organisations (O'Brien 1985: 24). The socio-economic side of the

agricultural sector wasn't prepared for this rapid structural change on the part of government. Despite financial incentives to farmers provided by an American investor during their investment period in the 1970s, commercial successes did not come about (Kontos 1990: 650). O'Brien (1985) saw this outcome to be rooted in the social structures of the Sudanese agricultural sector prior to the "breadbasket strategy". A "hegemonic agrarian bourgeoisie" (O'Brien 1985: 24) controlled large parts of the Sudanese rainfed agricultural sector at the expense of government-operated irrigated - mostly cotton - schemes. These private farmers used their powerful position in society to divert financial resources, machinery imports and fuel to their farms. The civil war with southern rebels also weakened on the regime's capacity. As a consequence of government budgetary shifts prioritising defence and security over economic services and general administration, the publicly funded irrigation schemes in Gezira were neglected and cotton yields declined (ibid: 24 f.).

The hegemonic agrarian sector, and the taxation of foreign trade, exacerbated the decline that led in turn to a reduction in exports and a desperate need for further foreign direct investment. The advent of Arab capital in the 1970s brought about an internal political struggle between several factions of the Sudanese elite. The Arab investments provided the trade-oriented faction of the Sudanese "shadow state" with the opportunity to become the power-base of the Nimeiri regime. The faction became the commercial agents of the Gulf investors (O'Brien 1985: 30). The "breadbasket strategy" and its agents, was, according to this view an outcome of internal struggles of the political elites in Sudan.

### **3.4. Institutional failures**

The clashes between the different factions of the political elite also stemmed from dysfunctional institutional settings. Kontos (1990) argues that farmers lost confidence in all institutions after the state under Nimeiri intervened in virtually all sectors of the economy, including agriculture. Tight government direction was introduced. There was oversight of what was produced and which harvested crops were marketed. According to the Gezira tenancy agreements farmers had to pay the Sudan Gezira Board (SGB) for water, fertilizers and mechanized farm operations. 40 per cent of profits had to be given to the SGB while the farmers were responsible for irrigation, maintenance, harvesting and clearing the fields of stubble left from previous crops (Kontos 1990: 654). This system penalised the farmers who were more productive than others. Other farming plots further away from the Nile proved to be less suitable for agricultural production as the soils were less fertile (ibid).

The power games between the old agrarian bourgeoisie and the Nimeiri regime favoured by the new commercial bourgeoisie led to deep mistrust between farmers and the government over Gezira scheme transactions. The tight regulatory, disincentivising measures of the government also negatively impacted social relations in the farming sector. While the regime replaced established farmers with sharecroppers and migrant workers in an attempt to keep a grip on the agricultural sector, kinship arrangements and thus labour availability within the highly traditional sector was negatively affected. Tenants who were migrant workers had very little interest in keeping their land rights and to identify themselves with the land. As a practical result of low incentives and low interest in their land, led to poor levels of crop productivity. The institutional failures were also evident for overseas investors. Arab investors from the Arab world were

allocated large tracts of land of which only smaller areas were cultivated. After yields faltered due to Sudan's difficult soils, the investors quickly moved on leaving behind environmental despair (Verhoeven 2013: 5).

A feature of these developments was the way that regional investment companies, such as AAAID, appointed their decision-making staff on a political basis. In many cases, influential "shadow state" actors managed to get family members on to the management boards. Unfortunately, agricultural and commercial expertise was not a prerequisite for these appointments. An interest in rent-seeking dominated (Key-Informant #7).

The droughts of the years 1981-83 led to intense social conflict in Sudan and the full collapse of the "breadbasket strategy" leaving millions of Sudanese food-insecure.

Investors withdrew from Sudan with failed business plans. The negative environmental aspects of investment without taking the environmental factors into account also became apparent in the 1980s. As Oesterdieckhoff and Wohlmuth (1983: 46) noted, "after some years" of cultivation the soil was exhausted and erosion became apparent. The spreading of "dust bowls" could be largely attributed to this type of agriculture'. Investors circumvented the environmental predicament by claiming new land for mechanised farming (ibid: 58). No compensation was granted to indigenous communities who had lived on this land.

In addition there was currency risk. The Sudanese Pound lost approximately 80% of its value from 1980-85. The endgame of the "breadbasket strategy" was the toppling of Gaafar Nimeiri by his defence minister Abdel Rahman Swar al-Dahab in April while Nimeiri was in the United States to receive 225 000 tons of food aid and an additional US\$67 million from the Reagan administration after Nimeiri agreed to comply with the

neoliberal reform measures proposed by the IMF (*Chicago Tribune* 1985). These measures were never, however, introduced. Instead the pro-Islamist successor government introduced ruthless liberalisation policies conforming to general global neoliberal trends. Further command-and-control measures were introduced along with money printing in what was called the “Economic Salvation Programme” to halt economic decline (Verhoeven 2013).

The correlation between this phase in Sudanese land and water development and global food prices was significant. In the course of the 1980s, food prices decreased, thus investment in Sudanese farmland became a less significant concern of other Arab economies. The expansion of the range of choice through agricultural investment was no longer seen as a vitally important strategy. As a result, the “breadbasket” idea was shelved for more than twenty years until the end of the 1990s when the Islamist regime under President Al Bashir advocated agricultural development once again. It was a response to new-found interest in the wider Arab world. The next section will outline the current scope of inward investment in Sudan.

### **3.5. Current investment plans in Sudan**

The potential of Sudanese agriculture was re-discovered in the late 1990s. The Al-Bashir regime revived the “breadbasket” idea that Sudan could solve all food security concerns in the Middle East. Pressed by the need to increase socio-economic development while at the same time facing Western economic sanctions due to the Darfur hostilities, the Sudanese regime allocated land to friendly Islamic and Asian countries, as well as to domestic investors from 1998-2008. The pace of allocation was accelerated by the Al-Nahda Al-Zira’ahah (Agricultural Revival Programme) in



2006/07, which assessed the potential of Sudan's agricultural sector for economic development. Sudan's strengths were described as "vast" due to the availability of free land and water resources as well as cheap labour for agricultural production. At the same time, the Agricultural Revival Programme also stated that Sudan required substantial investment in infrastructure such as roads, agricultural extension services and seed research as well institutions for agricultural development (ARP 2008). As during the Nimeiri regime, the Bashir government hoped that Gulf money could lead to "win-win situations". The scale of the allocation of land to domestic and foreign investors suggested that the regime in Khartoum had finally placed agriculture among its core economic development strategies.

The World Bank estimated in 2011 that the scale of allocated land to domestic and foreign investors reached 3.9 million hectares in 2009 of which 22 per cent was allocated to foreign investors (Deininger et al. 2011: 156). In total, foreign investors were provided with 879,000 hectares for agricultural development. However, the vast majority of the projects have not been implemented.

With respect to implementation it must be noted that both the Jordanian and the Qatari projects were different. Jordan, as shown in Chapters 6, 7 and 8 has implemented parts of the allocated land. Qatar on the other hand has declared that its project will be operational by 2015. However, other projects never went beyond the stage of grand ministerial declarations (*New Scientist* 2013). Nevertheless, Sudan was described as a prime destination for agricultural investment by international organisations, NGOs and international researchers. The scale of investment led to grave concerns of the impacts on the local community. Soon after estimates on the extent of the Agricultural Revival

Programme became available, the assumed appropriation of 3.9 million hectares in Sudan by domestic and international investors was labelled “land grabbing” (GRAIN 2013). This is the point of departure for the next section that will provide the literature on current developments around farmland investment research or, as it has been labelled by the international research community “land grabbing”.

### **3.6. FDI in agriculture in developing countries: the “land grabbing” discourse**

In the next sections, the discourse on farmland investment will be illustrated. Given the global scope of the phenomenon. The lack of verified data is emphasised. The literature on inward investment in agricultural land in developing countries for commercial use has exponentially grown in the past four years. The research community is increasingly becoming international. A number of institutes and organisations such as the World Bank, FAO, the Oakland Institute, Oxfam, the International Institute for Environment and Development, the Future Agriculture Consortium and the International Land Coalition have contributed case studies to the analysis of the phenomenon from across the world (Deininger et al. 2011; Cotula et al. 2009; Daniel et al. 2009; Oxfam 2013; Future Agriculture 2013; International Land Coalition 2011).

The defining moment for the interest in farmland must be linked to the food price spikes in 2007/08. After the food price spikes a number of public and private investors have discovered farmland as either an “asset class” or a way to achieve food security through agricultural imports produced on leased similar land (Campanale 2013). An “asset class” is defined as a “group of securities that exhibit characteristics, behave similarly in the marketplace, and are subject to the same laws and regulations. The five main asset classes are equities (stocks), fixed-income (bonds) and cash equivalents (money market

instruments), real estate and commodities”. Agricultural farmland is a mix between real estate (farmland) and commodities such as wheat or sugar and whatever is produced on the acquired land. The investment focus is on regions of where water resources are available for agricultural production and/or where economies have a status as net-importers of agricultural produce (Campanale 2013). However this interest in land as an “asset class” has not been without its critics.

Critical development experts have joined forces to quantify and map the current interest in land. The Land Matrix public database (see Figure 3.1.) was established under the leadership of the International Land Coalition to analyse the extent of land deals in developing countries. Figure 3.1. below illustrates reported investments in land. It must be noted, however, that the quality of data of the Land Matrix has been criticised as inaccurate. A number of reported projects never entered the implementation stage for reasons to be analysed at a later stage of this study (Verhoeven and Woertz 2012; Rural Modernities 2012).

According to the Land Matrix, the focus of investors in land and water resources is on Sub-Saharan Africa, Latin America, Eastern Europe, South Asia, Oceania, Central America and South East Asia where most deals have been concluded (Allan et al. 2013; World Bank 2010; Dwyer 2011).



**Figure 3.1. Agricultural investment globally (Land Matrix 2012)**

The investors have their origin in either the Western private sector (private investors), in emerging economies in Asia (public investors) or also in the recipient countries itself (domestic investors). According to the definition of the Organisation for Economic Cooperation and Development (OECD) “foreign direct investment reflects the objective of obtaining a lasting interest by a resident entity in one economy (“direct investor”) in an entity resident in an economy other than that of the investor (“direct investment enterprise”). The lasting interest implies the existence of a long-term relationship between the direct investor and the enterprise and a significant degree of influence on the management of the enterprise. Direct investment involves both the initial transaction between the two entities and all subsequent capital transactions between them and among affiliated enterprises, both incorporated and unincorporated” (OECD 1996: 7). Critics of land acquisitions have described the current wave of inward or foreign direct investment “as ‘Land grabbing’ or ‘the farms race’ in Africa akin a new neo-colonial push by foreign companies and governments to annex key natural resources” (Hall

2011). Borras and Franco (2011) have defined “the “global land grab” has emerged as a catch-all phrase to refer to the explosion of (trans-) national commercial land transactions and land speculation in recent years mainly, but not solely, around the large-scale production and export of food and biofuels. The emphasis on land grabbing builds on familiar, iconic images from the past of (Northern) companies and governments enclosing commons (mainly land and water), dispossessing peasants and indigenous peoples, and ruining the environment (in the South)”. The main difference between those who refer to farmland investment as “land grabbing” and those who define it as “foreign direct investment” is seen in the lack of “lasting interest” by investors and recipient countries. As a result, it is feared that human rights violations may occur in the course of agricultural investment.

### **3.6.1. Optimists and pessimists about agricultural investment**

The current literature on agricultural investment can be broadly divided into two groups: optimists and pessimists (Allan et al. 2013; World Bank 2008; World Bank 2010; Palmer 2010; McMichael 2010; Zoomers 2010; Cotula et al. 2009; Cotula 2011). Amongst the proponents of greater investment in agriculture are the World Bank, recipient governments, investors and private sector representatives (World Bank 2010; Riddell 2013; Campanale 2013). The demand for agricultural commodities is projected to increase by 70% by the year 2050. Population growth and protein-rich (meat) consumption patterns along biomass and biofuels production as a response to peak oil scenarios for energy purposes mark the major drivers of more food, more biomass, more biofuels, and more agricultural water use. In addition, domestic markets in recipient economies are anticipated to consume most of the additional input to the supply side. The World Bank (2008: 42) stresses that “agriculture has not been used to its full

potential in many countries because of anti-agriculture policy biases and underinvestment, often compounded by mis-investment and donor neglect, with high costs in human suffering”. Von Braun and Meinzen-Dick (2009) note that land grabs could also be conducive to ”the creation of a potentially significant number of farm and off-farm jobs, development of rural infrastructure, and poverty-reducing improvements such as construction of schools and health posts”. Campanale (2013) even argues that private equity companies could also contribute to a solution of global food security. As Campanale stresses ”these investors are drawn, on one hand, by the chance to profit from a “super cycle” of high demand for food, demand for land leading to appreciating land prices - whilst on the other, balancing this with continued apprehension over traditional capital markets” (Campanale 2013: 135).

By 2012 63 private equity firms investing in agriculture have set a target of aggregated capital raised to the value of 13.3 billion US Dollars (ibid). The general assumption/conviction amongst investors is to make that a positive contribution to food security in the coming decades can be achieved. Private sector investment in agriculture is regarded as a way to strengthen the essential expertise in terms of ”science, equipment, and management skills” in Sub-Saharan Africa (ibid: 35-36). Collier and Dercon (2009) argue that investment in large-scale agricultural production is desperately required in Africa to achieve food security over the coming decades. Although he contests the idea of “super farms”, he vividly supports the general trend of investment in agriculture regardless whether it that investment should be governmental, social, private or developmental (ibid).

The optimists' camp is small in size. The pessimists on the other hand have played a prominent role in the past few years. They have highlighted the grave risks associated with land grabbing in developing countries. The language is generally very grim. For example some research institutes such as the Oakland Institute (2011) have pointed out that "land grabs could be a much bigger threat to global security than international terrorism". Robin Palmer (2010) warned of a new form of imperialism was being inflicted by land grabbing activities. However, those grim descriptions are illiterate on the politics and economics behind land deals in Africa. As Chapter 8 will show, investment in land is by far more complex than assumed by the pessimists in the "land grabbing" research community.

### **3.6.2. Theoretical approaches to land acquisitions**

Theory does not get a prominent position within research networks such as the Land Politics Deals Initiative or development agencies' publications. The concern is mostly directed to finding empirical results on the extent of land investments or introducing governance mechanisms.

Another strand of research has focussed on the economics and legal consequences of land investments. A recent contribution in the field has been co-authored by the author of this study, the *Handbook on Land and Water Grabs: foreign direct investment and food and water security* (2013). It has introduced theoretical frameworks on how to analyse the recent surge of land acquisitions. Zetland and Moeller-Gulland (2013) attempt to distinguish between "grabbing" and foreign direct investment by hypothesising that deals are usually more likely to be grabs if rulers are less transparent and investors come from a less regulated economy. Saudi Arabia's investments in

Sudan are used as an example for grabs because neither of the economy has facets of a liberal economy (Zetland and Moeller-Gulland 2013). However, they fail to take into account the ways that Middle Eastern economies are governed. Blanket criticism of both economies on grounds of poor governance only exemplifies the need for further research. Warner et al. (2013) claim that “land grabs” mark a geopolitical shift within the semi-periphery of the World System. The authors go beyond the state-centric perspective by applying “two-level” theory to land grabbing. According to Warner et al. the domestic level is as important as the international. However, their analysis takes an investee perspective rather than an investing economy analysis. Keulertz and Sojamo (2013) argue that for the analysis of the international level of land investments, the role of Western agribusiness and economic philosophy should not be neglected. The study will return to this crucial driver of agricultural investment by Arab economies in Chapter 6. However, apart from a paucity of theoretical analyses of FDI in land, the current literature suffers from an absence of studies that explain the impact on the environment, which is presented in the next section.

### **3.6.3. Environmental analyses of land investments**

The environment is usually inadequately addressed in most studies of inward investment. Woodhouse and Banho (2011) have usefully analysed the use of surface and groundwater by investors but failed to include the role of rainfed farming. Williams et al (2013) have estimated the impacts of crop water requirements in Ghana and Mali to examine the impact of land investments on water resources. Precipitation was shown to be inadequate to sustain large-scale agricultural projects, thus irrigation with “blue” water resources must be applied to achieve the desired returns. Hoff et al. (2013) also warn of the current investors’ focus on blue water. MacDonald et al. (2013) further



point at the availability of groundwater in Africa but suggest careful monitoring of its abstraction due to the limitations in costs and availability of groundwater to sustain large-scale farming. While Mulligan (2013a) calls for more datasets to consult investors on how to meet global water and food security through investment in Africa, Antonelli and Gilmont (2013) propose to “analyse to optimise” available water resources and only make use of “blue” water where necessary and “green” water where possible.

It is necessary to be cautious about the levels of implementation of farmland investments. A widely publicised study for the United States Proceedings of the National Academy for Sciences (PNAS) attempted to quantify the water use of reported land investments (*New Scientist* 2013). It modelled the impacts of assumed current land investments on water resources across the world. The authors of this study, Rulli et al. (2013) warned that water use of land investments “overuses” available resources. In total, they estimate that 450 cubic kilometres of water have been “grabbed” (Rulli et al. 2013). However, the authors use of the Land Matrix and GRAIN database uncritically (see Chapter 5). They did not question the validity of the currently available data. As Cristina Rulli revealed to the environmental science journalist Fred Pearce, she did not know whether the projects listed in the databases had been implemented (*New Scientist* 2013).

This study will contradict the uncritical findings of the PNAS study, which is also totally illiterate on the politics of investment in food and water resources. The dissemination of such dangerously misleading analysis based on the faulty Land Matrix database discredits the academy. Since current research on the environment has proved

to be inadequate, the research concern of this thesis will fill an important gap in the literature on FDI in agriculture.

This study will show that water should be at the heart of investment decision-making on land and water development in Africa. Unfortunately, most of the analyses of investment in land do not analyse the role of the investors, which leads to misleading assumptions about the complex nature of agricultural investments. This study explains the political economy of farmland investments through the range of choice of investors. The theoretical framework used in the study differs significantly from the current literature. The several layers that influence range of choice will be identified, and their role in water management will be shown to determine the outcome of farmland investment. Through this pragmatic and pluralist approach, the study seeks to shed light on the motivations of the investors and it will be shown that politics matter most to explain agricultural investment.

### **3.7. Land grabbing or Foreign Direct Investment (FDI) in Land**

As emphasised throughout this chapter, the international research community has labelled the social phenomenon of concern of this study “land and water grabbing”. Despite the loud warnings of the faction that opposes “land grabbing”, the study will refer to the social phenomenon as either inward or foreign direct investment. This terminology will be used in the analysis and findings developed in the empirical chapters.

The “land grabbing” discourse with its grim assumptions regarding investors’ intentions and cultural backgrounds has not proven to be useful. For example, it was been long

assumed that China was one of the biggest “land grabbers” in Africa. This assertion has been contradicted by Deborah Brautigam with original research in several African countries (Brautigam 2013). The discourse around “land grabbing” long assumed that the millions of reported land deals were to be implemented within years. In June 2013, however, the Land Matrix confessed that the scope of “grabbing” had been exaggerated by poor data and a lack of implementation (*BBC News* 2013). The mis-use of data questions the whole field of research on “land and water grabbing”.

Over the past few years, the research on the social phenomenon of land investments has been refined and expanded. Early research on the topic has assumed that millions of hectares had been made operational without taking into account the political-economic environment that drives agricultural investments, a gap that this study seeks to address. As Chapter 2 showed, the plans within the range of choice in Jordan and Qatar are driven by an awareness of increasing water scarcity. It is a legitimate strategy for the two economies to invest their way out of the water crisis.

Most of the analysis to date has not taken into account the complex politics of agricultural investment. It has focussed narrowly on the announcements of areas over which deals have been made (“grabbing”). Referring to FDI in land and water resources as “land and water grabbing” has promoted a very unhelpful narrative, which neglects the legitimate interests of investors. Such negative messages have been disseminated for the past four years when research on “land grabbing” started to gain currency. This study will analyse on inward investment in farmland in the context of international and domestic politics and related political economy conditions.

### **3.8. Conclusions**

This chapter has reviewed the literature on previous attempts to expand the range of choice through farmland investments in Sudan. It has shown that investments failed due to a range of factors of which the role of political interests and institutional failures were among the most important. It has also shown that the current literature on “land grabbing” has inadequately addressed the political drivers and environmental impacts of FDI in farmland. The next chapter will present the theoretical framework of the study that will be used to analyse the drivers and impacts of agricultural investment by Jordan and Qatar.

# **CHAPTER 4:**

## **THE POLITICS OF WATER AND FOOD: THEORETICAL FRAMEWORK**

## **4. THE POLITICS OF WATER AND FOOD: THEORETICAL FRAMEWORK**

### **4.1. Introduction**

The preceding chapters outlined the main research concerns and the historical and environmental background of the study. This chapter presents the theoretical frameworks and concepts that have guided the research and shed light on the range of choice of those who manage the food and water security of Jordan and Qatar. The paucity of theory in the current publications on water resources management in the current wave of overseas farmland acquisition provides the study with a unique opportunity to apply and reappraise a number of theoretical frameworks, some of which are from within the field of water science and management and some from a wider range of theory. This approach will enable the study to contribute explanations with respect to the conditions and factors that have shaped past and current farmland acquisition by Middle Eastern investors. The study takes up the suggestion by Bauer and Brighi (2011) to deploy a pragmatic approach as in the social sciences this approach is much more pluralist than other approaches. Pragmatism invites students “to take disciplinary boundaries less seriously, dispense with scholasticism, and engage in a kind of eclectic inquiry which, far from granting that “anything goes”, puts a premium on creativity, reflexivity and imagination” (Bauer and Brighi 2011: 2).

The chapter will first present the main framework of the study – the range of choice - to analyse the options available to Jordanian and Qatari decision-makers. It will then provide the reader with an overview of American Pragmatism as the underlying

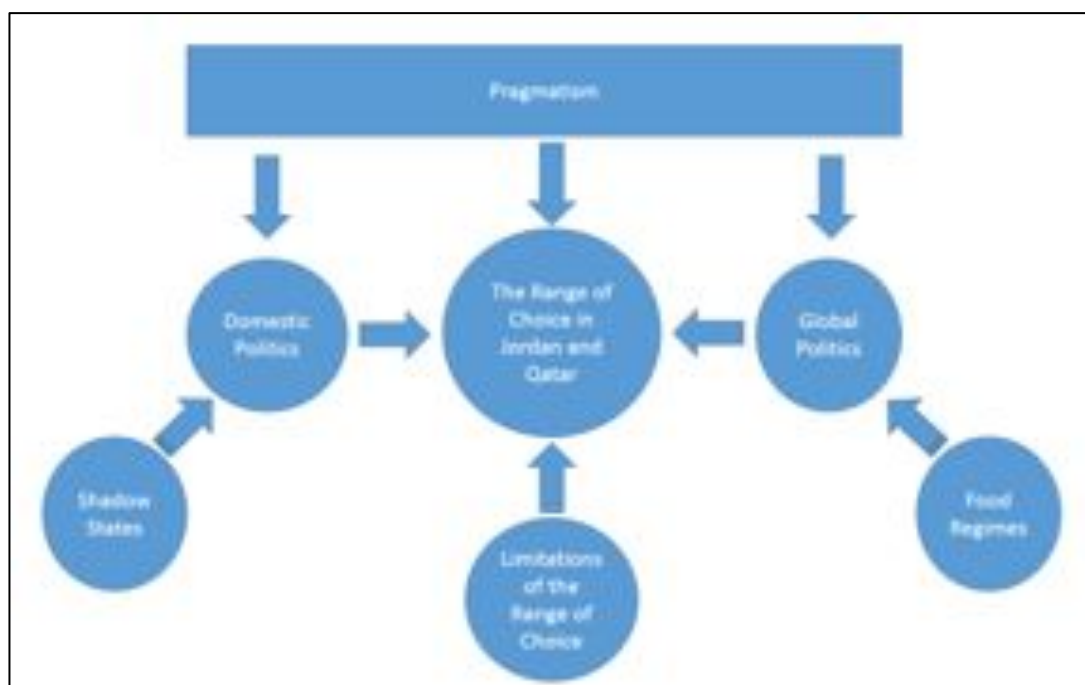
philosophy of the range of choice to explain the epistemological foundation of this dissertation. The second part of the chapter will illustrate the concepts that have been applied to analyse the drivers of the expansion of the range of choice to virtual water “imports” through investment in Sudanese farmland. These drivers stem from both international and domestic levels, namely “food regime” theory and the “shadow state” concept respectively to explain the role of global and national social power in expanding the range of choice. The chapter will also critically reflect upon the concepts deployed and how the approach of this study can engage with the perceived flaws of a pragmatic inquiry. Finally, there will be comment on the limitations of the approach. The study will make full use of the opportunities provided by Pragmatism to engage in an eclectic inquiry by introducing the literature on the limiting factors that are evident in development politics, economics and the environmental sciences.

The pragmatic mode of inquiry enables the deployment of the range of concept to explain the complex role of politics in food security decision-making. The “shadow state concept” at the national level and “food regime theory” at the international level will be used to show how the Jordanian and Qatari “practical range of choice” outcomes have come about. It will also show the outcomes have been influenced by the availability of virtual water “imports”.

It is argued that the politics in which domestic players engage and the international food system in politics and trade have together prompted the expansion of the range of choice in water management options. Virtual water “trade” associated with international land acquisition in Africa in particular is the issue that will be highlighted and explored. Water scarcity is the fundamental driver that has pushed Jordan and Qatar to engage in

FDI in farmland in Sudan. Investment in land can be interpreted as investment in water resources in order to “import” virtual water from those regions. However, as well as the drivers of the expansion of the range of choice to farmland investment, the study will also illustrate its limitations. The study will shed light on the pragmatic mind set of the decision-makers in Jordan and Qatar when they are faced with the limitations to their expansion of the range of choice.

Figure 4.1. illustrates how the two political scales influence the range of choice and how this feeds into decisions on farmland investment. The influence of both international food politics and domestic politics have triggered the expansion of the range of choice. These processes will be analysed in Chapters 6 and 7. The Figure 4.1. shows the limitations to be analysed in Chapter 8.



**Figure 4.1. Theoretical framework of the study**



The overarching concept underpinning the study is that those managing food and water security have choices in the way they allocate and combine inputs (Kates and Burton 1986: 144). The range of these choices is dynamic. It is affected by changing environmental, demographic, economic and technical conditions. This study will show that politics over-rides these other potentially determining conditions. As chapter 2 has shown, the investing economies are subject to perceived water scarcity and they try to access the comparative advantages of African economies by raising food in African economies and importing it. It is widely assumed that such food can be grown in water-abundant regions.

The resource of concern in this study is *virtual water* that is water embedded in food (Allan 2011). The concept used in this study is the *pragmatic range of choice concept* that was introduced by the US geographer Gilbert White in the 1950s to explain how decisions are made in contexts where options are available to public policy makers (White 1961 and 1968).

The concern of this study is how virtual water embedded in food commodities raised in farmland in Africa is “traded” into the economies of very water scarce MENA economies. How “traded” virtual water - the option (choice) of concern within the range of choice - features in domestic and foreign policy will be a recurring theme.

The range of choice concept builds on American pragmatist thinking, a philosophical tradition conceived by Charles Sanders Peirce, William James, John Dewey and others (Kates and Burton 1986: 143). White’s range of choice will be connected with “food regime” theory and the “shadow state” concept to explain the international and domestic drivers. “Food regime” theory has its roots in the broad field of *international political*

*economy* (hereafter referred to as IPE), which is a critical approach to the study of politics and economics in the global arena. Within the IPE discipline, further concepts such as the applied “food regime” theory have emerged to explain foreign policy making. Friedman defines global “food regimes” as a “rule-governed structure of production and consumption of food on a world scale” (Friedman 1993: 30–1). IPE will be applied to explain the international pressures that have forced Middle Eastern decision-makers to look to expand their range of choice through FDI in Sudanese farmland.

On the domestic side, the “range of choice” concept is deployed to provide an analysis of the sub-national pressures Middle Eastern decision-makers have had to accommodate. The “shadow state” concept explains the informal networks of power that influence decision-making in Middle Eastern economies where power is based on patron-client relationships (Tripp 2007; Springborg 2008). In order to study the range of choice of Middle Eastern decision-makers, virtual water will inform the study as the underlying concept of land and water grabs. Pragmatism will be brought into the discussion with an analysis of both international food politics and the social power behind management decisions. The “shadow state” concept and “food regime” theory provide a comparativist analysis of investment in land in order to highlight that the available theoretical and practical range of choice are deeply political.

This theoretical framework is employed in order to provide the basis to analyse the domestic and international power relations that shape the silent economy of virtual water flows between East Africa and the Middle East as well as on the global level. However, a decisive aspect of the range of choice concept is its emphasis on limitations.

The study will analyse the limitations of the expansion of the range choice by explaining the economic, cultural and environmental factors that impede the perceived alternative option to invest in Sudan.

#### **4.2. Overarching concept: The range of choice**

New alternatives to mobilising and managing water are the main focus of this study. However, how does the water management literature conceptualise agricultural investment in East Africa by Middle Eastern governments? Wescoat has stressed that resource geography has dealt with the institutional structure of water problems, with water conflict, and with water policy and water property rights; yet, alternatives to the existing management options have hardly been studied. “America's most influential geographer of the twentieth century” (Wescoat 2006), Gilbert White, contributed to geographical concerns with the “range of choice” idea. He first stated, in 1945 that “a geographical approach studying flood problems should consider all possible alternatives for reducing or preventing flood losses” (quoted in Wescoat 1987: 44). He called this concept the range of choice, which, according to White, involves six core elements of water resources decisions:

- 1) Range of choice
- 2) Resource estimates
- 3) Economic appraisals
- 4) Technological appraisals
- 5) Spatial linkages
- 6) Social guides

Despite his original application of the concept to hazards such as flood related problems, the concept was broadly formulated for decision-makers of water policy. In this respect, a resource decision-maker always has alternative options within their range of choice. First, there is always a **theoretical** range of choice that constitutes a “number of adjustments and uses that have been practised in any similar environment, plus a possible innovation”. Second, despite the above theoretical range of choice, the **practical** range of choice differs substantially due to the cultural constraints imposed by the broader community and by the social awareness of the decision-maker (White 1945: 26). The practical range of choice may be limited to the theoretical range of choice as a consequence of physical and cost factors, institutional factors and cultural factors (National Academy of Sciences 1967: 82-87). This study will analyse both the theoretical range of choice of Jordanian and Qatari policy-makers and the practicality of the options identified by analysing the limiting factors that White discussed in his initial formulation of the concept.

White's research focussed on alternatives to water management such as engineering, institutional management, and location alternatives available to decision-makers to avoid water stress. Significant in the range of choice concept is the perception of the environment (Kates and Burton 1986: 144). White expanded the concept by linking social psychology and geography (Kates and Burton 1986: 219). In his capacity as chairman of the Committee on Water for the National Academy of Sciences in 1967 White explored alternative water resource management choices the example in the Colorado River Basin (National Academy of Sciences 1967). He argued that the Colorado River Basin's closed nature in the 1960s had led to a policy-making decisions in which alternatives in water management depended on “thoughtful planning in

response to public aims” (ibid: 1). By “aims” White privileged the promotion of economic growth (ibid: 66).

White’s policy suggestions included the conservation of water and the analysis of its economic value for the agricultural sector, for industry and for domestic water use. It proposed that the range of choice available to decision-makers in Arizona should include a number of options such as the reduction of use in households and industry, the raising of less water consumptive agricultural crops and wastewater reclamation (Ibid: 73-80). However, White also conceded that there were limitations to the range of choice due to factors such as the physical availability of water, the costs of alternatives and cultural factors (ibid: 80).

White also saw water development as one of many alternatives. He also stressed that non-water sector investments in education, infrastructure and industry among others could be alternatives for decision-makers to expand their range of choice (ibid: 59-65). Although not explicitly mentioned by White, investment in overseas farmland could be an alternative to domestic demand-side water management. Thus, the range of choice for Middle Eastern decision-makers - from both the public and private sectors - can, and has been, expanded and in this study the range of choice has been shown to include the role of virtual water “imports” in the theoretical and practical range of choice.

To White, perception is the method employed by decision-makers to assess water and is crucial for determining how resource management is then shaped. In this respect, water can be viewed from various perspectives: social, political, economic and environmental.

However, White's perspectives are underpinned by a philosophy, which is introduced in the next section.

#### **4.2.1. Pragmatism as a theory behind the range of choice**

How can the aims-oriented commodification of water and virtual water be framed in the range of choice's underlying pragmatic theoretical understanding of the modern world?

Wescoat argues that despite White's utilitarian, common sense approach that doesn't have much theoretical grounding, the underlying philosophy of his contribution to geography is a form of American Pragmatism strongly influenced by John Dewey (Wescoat 1987: 46; 1992: 587). It is an influential school of thought. Pragmatism has its origins in late 19<sup>th</sup> and early 20<sup>th</sup> century America. As mentioned earlier, the founding fathers of the American school of Pragmatism were three of the most significant US intellectuals of their time: Charles Sanders Peirce (1839-1914), William James (1842-1910) and John Dewey (1859-1952). According to John Smith's (1999: 3) account, while Peirce was prone to logical and metaphysical thought, James emphasised psychology and personal experience. Yet, it was Dewey who applied a "Hegelian" synthesis to the two pragmatists' thoughts "stressing the biological and functional structures in individual life and society" (ibid).

Thayer (1981: 5) attempted to define Pragmatism as an initially intended "inquiry into meaning" by Peirce in the 1870s, which was conceived as a theory of truth by James in 1898 and further expanded, developed and disseminated by Dewey at the beginning of the 20<sup>th</sup> century. Lloyd (2009: 500-2) stressed the significance of Deweyan Pragmatism in forging a national American, anti-German unity in the wake of the First World War. For the sake of nationalist ideology, Pragmatism was used as a non-ideological,

practical cultural philosophy for US war interests (ibid: 503). Its practical agenda formed its “basic outlook”, which Smith (1999: 3) defines as follows:

*“This outlook stands for some doctrines about the nature of things, but it also includes a way of thinking, a spirit of adventure, and above all, the belief that ideas make a difference in the world and are not merely to be contemplated but must be set to work guiding what we think and do”.*

Wescoat (1992: 589) situates Pragmatism at the heart of American thought and culture, stressing the organic relations between society and the environment. The essence of logic for pragmatists is *inquiry* as opposed to truth or knowledge. Dewey saw inquiry as “a means for objective transformations of objective subject-matter” (Russell 1948: 851). All actions are based on prior experience, which then leads to active transformation. Pragmatists reject deterministic and dualistic representations of mind and body, idealism and materialism, nature and society. As Proctor (1998a: 354) points out, “it enjoyed particular popularity amongst environmental practitioners and philosophers in the twentieth century”. Unlike the European schools of social constructivism and realism(s), Pragmatism as a philosophy seeks to inquire about human problems rather than epistemological quests, which are roundly rejected (Proctor 1998a: 364). As Clarke argues “justification must be given relative to the actions for which the accepted proposition serves as a basis and to purposes these actions fulfil” (quoted in Proctor 1998a: 364).

A central value of environmental philosophy and ethics for Dewey was the emphasis on *growth*. For pragmatists, growth is a moral imperative, a constant reminder that humans

expand their cultural horizons, broaden the variety and richness of their practices, and make the world a place where others may also pursue those goals (Talisie and Aikin 2008: 168). This central value, of course, contradicts conservation and preservation, which a coalition of environmentalists, development agencies and scientists seek for Middle Eastern water resources. Bower (2003: 26) therefore links pragmatist epistemology to the ecological crisis by stressing that its emphasis on growth “undermines the ability of many cultures to avoid the consumer/technology lifestyle”.

This study seeks to explain the need to develop farmland in Africa, and how perceptions of water security influence the range of choice. It will be argued that the interplay between domestic and international food politics results in the Jordanian and Qatari aspiration for further virtual water “imports” in the form of agricultural commodities from Africa. By investigating the range of choice of Jordanian and Qatari decision-makers, this study goes beyond the customary emphasis on science and social psychology outlined by White and instead explicitly links a pragmatic inquiry with issues of social power and knowledge. “Food regime” theory and the “shadow state” concept are the two concepts that help to develop the linkage in understanding the triggers that politically influence and limit the range of choice.

#### **4.2.2. Range of choice in water management**

The next section will interconnect the two concepts deployed in this study with pragmatic inquiry. Rorty (1979: 5) argues that, “Pragmatism is problem-driven and thus decidedly unsuspicious about structures of power”. Hence it cannot account for the interdependence of the domestic and international food politics behind the expansion of the range of choice to farmland investments. It has therefore been placed in dialogic



relations with critical theory (e.g. Horkheimer's critique of instrumentalism) from which Pragmatism has enormously benefited (Kadlec 2006: 521). However, neither field of philosophy has been able to dispel the misunderstandings, deliberate distortions and well-meaning incomprehension (Joas 1993: 94-121). Kadlec proposes a different way of bridging the gap between Pragmatism and critical frameworks such as IPE and elite sociology. Pragmatism emphasises the concept of growth through lived experience in a world that is by no means static but rather, is "in the making" (ibid). Thus, a Pragmatic inquiry takes the constant change that the world is exposed to into account, which includes the role of those influencing it and the political contention in which they engage.

Dewey himself emphasised *experience as a process*, which can enable critical reflection. More significantly, Dewey's notion of "growth" provides "the tools for critical interrogation of existing institutions" and thus fosters the development of individuals who possess habits of critical intelligence (Kadlec 2006: 539). Pragmatism permits differing opinions stemming from critical frameworks such as IPE. It serves as the bracket to include the criticisms of lived experience to promote individual "growth", which may then incorporate the analysis of domestic political structures in the interests of the "shadow state" and international political structures. These critical concepts are deployed in this study to explain the reasons for the alternative (virtual) water "import" option through farmland acquisition in Sudan within the theoretical and practical range of choice of Jordanian and Qatari decision-makers.

#### **4.2.3. Critics of Pragmatism**

For critics of Pragmatism such as Bertrand Russell, it represents a power philosophy where humans may become trapped into “cosmic impiety” and even “a certain kind of madness” that lacks an element of humility (Russell 1948: 856). In 1948, Russell predicted a “vast social disaster” as a consequence of (however unintentionally) Pragmatism’s epistemology, which is prone to an intoxication of power to shape the world according to “useful aims” based on utilitarian ideals. This idea was strongly rejected by the Marxist camp. “Inventive dwarfs for hire” was a catchphrase of Berthold Brecht to describe the American mode of scientific inquiry. Harry K. Wells compared Pragmatism to imperialism, which helps to secure the interests of a minority class to shape the world according to their needs (Wells 1954). Max Horkheimer (1967) placed it in the positivist bend and criticised it for laying the philosophical foundations for the teleological subsistence strategy of Capitalism. Amongst geographers from the social constructivism school, Pragmatism is criticised for its bias towards relativism (Proctor 1998a: 364).

This study acknowledges the valid critique of the pragmatist mind set. Some of the criticisms do not hold when taking a second look at the epistemology of Pragmatism. It is argued in this study that Wells and Russell may have misinterpreted Pragmatism as a philosophy to shape the world merely according to “useful aims”. Pragmatism only seeks to inform the inquiring individual, not to manipulate another third person or “the world”. The very concept of lived experience responds to Russell’s criticism that Pragmatism’s “useful aims” are constantly re-configured according to lived experience. American philosophical Pragmatism is a reformist meso-level philosophy, which is consonant with the reformist meso-level ambitions of this study. By incorporating

global and domestic power relations, the study addresses much of the criticism outlined above. The two critical concepts therefore provide a useful framework including critical analyses of the range of choice in Jordan and Qatar. The two critical concepts outlined in the coming sections will enable the study to shed light on the Pragmatic drivers of Jordanian and Qatari farmland investments. However, before providing the theoretical framework for the critical analysis of the drivers of farmland investments in the two Middle Eastern economies, the literature on the resource of concern will be introduced.

#### **4.3. Virtual water as the resource of concern**

The resource of concern for the drivers of the expansion of the range of choice to agricultural investment is virtual water, a concept introduced by Allan in the early 1990s to describe the water used to produce crops traded in international markets (Wichelns 2010; Allan 1996; 2002; 2011). Virtual water has gained significant worldwide attention from decision-makers, the private sector, the media, civil society and the academy. It captures the role of water in food production. The Water Footprint Network around Arjen Hoekstra in the Netherlands quantified the volumes of water embedded in food commodities. For instance, a ton of wheat has been estimated to use 13,000 litres, and a ton of beef 155,000 litres of (virtual) water (Water Footprint Network 2013).

Virtual water performs a major and invisible role in bringing water and food security to the water scarce. It is also politically silent. It is easily ignored but it has changed the way many water professionals and policy-makers see water (Allan 2011; Biro 2012). Water scarce economies such as those in the Middle East can trade themselves out of a water deficit by importing the required water in food commodities from water-abundant

economies such as North America, which means making use of North America's absolute hydrological advantage. With diversifying diets, economic development and growing populations, the demand for food in investing economies is set to increase over the coming decades.

The debate around virtual water as a concept for economic policy making has gradually been expanded over recent years. Earle (2001) views virtual water "trade" as conceptually based on the Heckscher-Ohlin model, which builds on David Ricardo's comparative advantage theory in international trade. It suggests that countries will determine optimal trading strategies based on relative factor endowments exporting commodities where they have relative abundance while importing goods where they are affected by scarcity (Wichelns 2010: 2206; Blaug 1992: 185). Thus, the production of food in Africa would be based on the Heckscher-Ohlin model of trade as Africa enjoys comparative advantage in water availability compared to the Middle East.

Economists such as Wichelns and Merrett (2010; 2003) view virtual water as a metaphor without much theoretical grounding. They contest the value of the concept for international trade economics. Merrett (2003) argues that the term "virtual water" is misleading and suggests replacing it with "water required for crop production".

Wichelns (2010) accepts its terminological value but is concerned by its lack of a theoretical foundation. Wichelns in particular contests the application of the Heckscher-Ohlin model by Earle (2001) to show how virtual water "trade" can lead to a utilisation of comparative advantage. Wichelns argues that water-scarce economies can still export food, and achieve equilibrium through virtual water "trade". Ansink (2010) further supports this argument by stressing that the claims such as virtual water "trade's"

potential to alleviate scarcity in one country and prevent conflict expressed by Earle are flawed due to the problematic application of the Heckscher-Ohlin theorem.

Reimer, however, in his analysis, defends virtual water “trade” against its critics because “it simply implies that the Heckscher–Ohlin trade model does not account for everything that matters for a real world analysis of trade flows” (Reimer 2011: 138).

The international trade literature has also moved on from the Heckscher-Ohlin theorem to numerous other economic interpretations, which suggest that classical trade theory may not be applicable anymore to modern day phenomena.

Wichelns, Ansink and to a lesser extent Merrett, take an economic approach to criticising the value of the virtual water concept. Economic trade theory is not the objective of this study. It ignores the importance of the politics and instead focuses solely on economic theory. Tickner and Chapagain give credit the virtual water concept as it helps to contextualise water policy options (Tickner and Chapagain 2012).

According to Stephen C. Pepper (1970), contextualism is another term for Pragmatism, whereby the root metaphor is the “act in context” or “in fusion with the event or object matter” (Pepper 1970: 244-252). The range of choice concept provides this study with the option to apply virtual water in the context of domestic and international politics without getting bogged down in the reservations of economic theorists. Rather, it will be used in context with the two critical frameworks – “food regime” theory and the “shadow state” concept - to assess the role of power in water management.

#### **4.4. Water and power relations**

A core focus of this study is an analysis of how power relations - both national and international - influence the Pragmatic range of choice concept and how this has driven

farmland investment options for Jordan and Qatar. The study of power and water has attracted a large range of social scientists throughout the twentieth century. One of the earliest academics to study the importance of water for the powerful in a political economy was Karl-August Wittfogel (1957). Despite the criticism of his overly dichotomist analysis yielding “racist” outcomes (Toynbee 1958), his concept of hydraulic societies in Asia gave rise to the idea of water being a means for the elites to exert and especially retain power over the rest of society. However, Wittfogel was unaware of “virtual water” and “green” water and focused narrowly on the control of “blue” water as being crucial potential source of power in society. Virtual water incorporates, however, not only “blue” water but also “green”/soil water.

Other authors further reinforce the “blue” water focus in the literature. Donald Worster (1986) analysed the historically significant role of water for the development of the American West and how ecological change is inextricably intertwined with social evolution. He determined that the widespread increases in water supply was achieved through the building of infrastructure which shaped the economic and social course of the US hinterland over the course of the 19th and 20th centuries. He then defined and reviewed these power relations. Swyngedouw (2007) argues that transformative knowledge of water can only be gauged from reconstructing the processes of knowledge production. In his historical materialist analysis, “socationature produces sociopower with nature as a historical product being the foundation and social relations produce nature's and society's history” (Swyngedouw, 2007: 448). Sneddon and Fox (2006: 182) usefully remarked that the political management of water is exercised by actors constituting an international elite (for example the water industry, international non-governmental organisations, scientific advisors, government representatives, private sector advisory

bodies or think tanks and the UN system) that push for a global (demand-side management) agenda.

In their studies of transboundary water relations, Warner (1992) and Zeitoun (2006) established a “hydro-hegemony” framework linking power and hegemony with regional water conflicts. Warner and Zeitoun (2008) sought to incorporate two factors into transboundary water relations, conflict and power asymmetry, in order to apply it to hydro-hegemony. All of these concepts have a “blue” water focus in common. “Virtual water” does not feature in their analyses of water power relations.

Up to this point theoretical frameworks have been presented that explain the political drivers of farmland identified as the core objective of such investment. However, in order to discuss the criticisms of Pragmatism, that it is a power philosophy ignorant of power relations, this study will analyse two significant reasons for how the pragmatic range of choice has been influenced by global and national power relations, namely “food regime” theory and the “shadow state” concept.

The next section of this chapter focuses on theoretical frameworks in relation to investment. Inward investment in farmland has been underpinned by Pragmatism, which is borne out in the range of choice concept in water management.

#### **4.5. Theoretical frameworks in IPE**

In order to theorise the social foundations that shape the range of choice the study applies the theoretical framework of IPE. This framework emerged during the mid-1970s and was adopted by various critical International Relations scholars to provide an

analysis of global politics and economics. It has become a distinct sub-field of international relations (O'Brien and Williams 2007: 1). It is often deployed in the study of political and economic phenomena with global dimensions (Abbott and Worth: 12). IPE draws critically on the theories and concepts of neoclassical economics (Gilpin 2001: 77) but seeks to ask different questions than those posed by economists. Economics is primarily concerned with efficiency and the mutual benefits deriving from economic exchange. IPE incorporates the distribution of gains in its analysis (ibid). Harold D. Laswell defined politics in 1936, as "*who gets what, when, and how*"? (Ravenhill 2008: 19). The world economy underwent dramatic changes in the decades after the Second World War with power gains for private capital in the allocation of scarce resources.

In the 1960s, it became evident that the international relations literature lacked a coherent body of political-economic literature to explain economics and its links to world politics (Katzenstein et al. 1998: 654). Furthermore, the absence of power relations' analysis in economics, which is at the heart of IR enquiry, meant that there was no sustained research in either economics or political science. These deficiencies contributed to the realisation of this analytical gap by both disciplines, and the need to establish a sub-field of international relations to explicitly address power relations in IR. The field was later termed IPE. (Katzenstein et al. 1998: 645). The next section will illustrate the different paradigms of the broad IPE field.

The dividing lines of the field of IPE were set in three different paradigms: first, the realist/statist; second, the liberal/functionalist; and third, the Marxist/structuralist.

American and British commentators often applied different concepts with US scholars



being labelled as “rationalist”, “mainstream”, “orthodox”, “conventional” or “Ratiosaurus Rex” (Dickens 2006). The other school, which emerged in Britain and Canada, was described as “progressive”, “radical”, “critical”, “heterodox” or “reflectivist” (ibid).

Both schools reflected different approaches and methods with the American school drawing on quantitative, rational choice type analysis and the British being more focussed on qualitative, public-choice methods. This perceived dichotomy raised concerns about IPE’s applicability especially after the end of the Cold War when the world witnessed another dramatic shift in international economic relations, which the ascendancy of Eastern powers such as China and India. Ravenhill (2008: 551) notes the hitherto narrow focus of IPE on international trade issues and global finance, which he hopes to see expanded by future research. This study with its focus on FDI in virtual water in Africa echoes this call for a broader application of IPE to topics that it previously hasn’t covered, which will be presented in the next section.

#### **4.5.1. Key concepts in IPE relevant to the range of choice concept**

As Katzenstein and Sil (2005) and Friedrichs and Kratochwil (2009) suggest, Pragmatism can advance IPE scholarship if applied eclectically to a topic such as the topic of concern of this study. The question is therefore, which paradigms in IPE can most usefully account for the drivers of the expansion of the range of choice to farmland investment?

The world has recently experienced a severe financial crisis in a system where the economic foundations were based on neoliberalism, an economic theory that highlights

the role of the private sector as opposed to that of the public sector (after Harvey 2010). But even in neoliberal conditions nationalism remains a potent force in guiding the thoughts and actions of national elites.

As a representative of the school of nationalism in international relations, Karl Deutsch (1988: 98) notes that the economic perceptions of the elites, which he refers to as a kind of "Parkinson's Law", feed into national security in relation to a nation's power. Although he deploys the economic national interest only to larger nations such as the US, the Soviet Union and China, this study will apply it to two very different nations in the Arab world: Qatar and Jordan.

Nationalism in international relations shares the paradigm with the European political left that domestic social interests (usually of the elites) drive foreign policy (Katzenstein 1976: 7), which critically analyses society. The European right (ibid: 7) however, has focussed on the role of the state in shaping foreign policy. The IR paradigm draws on the eighteenth century mercantilist theory, nineteenth century balance of power theory, and twentieth century strategic theory to conceptualise the role of the state in shaping foreign policy.

This study will follow up on both interpretations of international politics, for example as advocated by Karl Deutsch as well as by Robert Gilpin (2001), E.H. Carr (2001), John Mearsheimer (1990) and Susan Strange (1996), who have always ascribed to states the most significant power within the international arena. As Gilpin (1981: 18-19) stresses, "the economic/foreign policies of a state reflect the nation's national interest defined by the dominant elite (or 'shadow state') of that society". In particular, security concerns

over economic, military or even psychological power are vitally important in international relations, and hence states must always be aware of changes in power relations.

As Gilpin (2001: 18) argues, the interests and policies of states in the international political economy are determined by the governing political elites that dominate the practice of “statecraft”. The food price spikes of 2008 have contributed to elite perceptions of food insecurity and “virtual water security”. As a result, amongst the most active investors in African farmland are governments or parastatals from Asia (and the Middle East) that act either to seek alternatives to their national food security in African agriculture, or, on behalf of a certain social class or interest group, seek to mitigate the prevalent fears of food insecurity.

As the study will show, elite perceptions are very useful in explaining foreign investment in overseas farmland insofar as the perceptions are concerned with survival and national security; both of which can be defined in different ways. The framework for the analysis of the topic of this study, which focus on the current investment strategies of Jordanian and Qatari investors in East Africa, will examine closely elite perceptions.

#### **4.5.2. The “Shadow State” concept**

The concept that will structure the analysis of the broad paradigms of nationalism and economic realism is the “shadow state” concept. The “shadow state” concept has its origins in Max Weber’s analysis of traditional authority in his seminal lecture on the tripartite classification of authority (Weber 1919) and neo-patrimonialism as defined

and conceived by Eisenstadt (1973) and later expanded by Clapham (1982). The neo-patrimonial state concept sheds light on the nature of the developing state in Sub-Saharan Africa, where patrons use state resources to secure the loyalty of clients in the general population (Eisenstadt 1973; Clapham 1982).

The works of Weber, Eisenstadt and Clapham generated the idea of personal rule in world regions other than the Middle East. The “shadow state” concept is a refinement of neo-patrimonialism for Middle Eastern states. The major contributors to the analysis of the structural power relationships within the Arab world were Charles Tripp (2007) and Robert Springborg (2007). The “shadow state” concept originates from Charles Tripp’s work on Iraq and Springborg later applied it to the whole of the Middle East. A “shadow state” is a neo-patrimonial form of rule that exists behind the official facade of laws and government institutions. Authority is based upon the decisions and interests of an individual, not a set of written laws and procedures, even though these formal aspects of government may exist. As Tripp notes “it is the real nexus of power that stood (in Iraq) behind all public state organisations, turning their hierarchies upside down and answering to a very different set of commands” (2007: 259).

The key actors in a “shadow state” are tied to the official ruler through a common regional background, through kinship or through tribal affiliation (ibid: 259). In order to assure allegiance to the “shadow state”, the ruler must appease them through privileged access to the economic assets of the economy, including land and water. Springborg (2007: 3-4) later noted that the “shadow state” concept can be applied to the entire Middle Eastern region, including Jordan and Qatar. The “shadow state” concept provides a way to understand power structures in the Jordanian and Qatari water and

food sectors. This study seeks to explain how these power structures influence the dynamics of the range of choice of the elites that operate in the national and international domains of food and water security.

#### **4.5.3. The Crisis of Liberalism**

The neoliberal world order shapes a globalised economy that has been severely impacted by the near collapse of the financial system in 2008. Mittelman (2010: 159) points out that the catchword “crisis” has been vividly employed by a number of commentators as well as politicians from around the world. However, the crisis of Capitalism is closely related to the decline of Western neoliberal ideology, which has led intellectuals from emerging Asian countries to doubt the approach. The “crisis” perceived in the West is perceived differently in the East. The current “crisis” may be neither a financial crisis nor “the sum of multiple systemic crises, but the crisis of Western Capitalism of oligopolies” that has dominated the so-called “developing world” for decades if not centuries (Amin 2010: 263).

These oligopolies have a profound impact on global food trade as a recent Oxfam report concluded (Murphy et. al 2012) For Gills (2010: 277), this “systemic crisis” marks a “hegemonic shift” in which power is moving to new players in the East (Amin 2010: 264). The “swinging of the pendulum” or the “seismic shift” (Gills 2009) within the international political economy is especially visible in the area of virtual water/food security.

In 2007/2008 and again in 2010/11 the neoliberal agricultural global order experienced a severe crisis due to sudden price hikes caused by several factors such as policy

changes toward biofuels, inelastic markets, prices of fertilisers, US Dollar depreciation and the notoriously low investment in research and development in agriculture since the 1980s (Piesse and Thirtle (2009). All of these factors affirm the crisis of the prevailing liberal paradigm that, at least in the official political rhetoric, had permeated agricultural systems for decades. The expansion of the range of choice to agricultural land investments may be a response to the crisis of liberalism by governments in the Middle East to pursue national interest policies.

This crisis of Anglo-Saxon liberalism now casts a cloud over the most basic of all political concerns of the global economy: the provision of food and thus “virtual water security”. The food price spikes of 2007-08 have led to grave concerns amongst governments in developing countries where price shocks had a drastic impact on the livelihoods of people with unforeseeable consequences for all stakeholders (GTZ 2009; Custodis 2013; Piesse and Thirtle 2009). This crisis of the current political-economic order of food politics has also impacted the range of choice, which this study will illustrate through an analysis of the drivers in global food politics.

#### **4.5.4. “Food regime” theory**

Although it is acknowledged by this study that a vast range of literature analyses the international system from numerous perspectives in IPE, it will apply a concept that has its theoretical foundations in the critical World Systems theory. “Food regime” theory introduced by Harriet Friedman and Phillip McMichael will provide a structuralist explanation to illustrate the role of international politics in the range of choice.

As McMichael argues, *“the “food regime” concept historicises the global food system: problematising linear representations of agricultural modernisation, underlining the*

*pivotal role of food in the global political-economy, and conceptualising key historical contradictions in particular “food regimes” that produce crisis, transformation and transition. In this sense, “food regime” analysis brings a structured perspective to the understanding of agriculture and food’s role in capital accumulation across time and space” (McMichael 2009: 140).*

“Food regime” theory builds on Marxism in structuring food politics in the global economy by underlining the geo-political dimension played out through an intrinsic core-periphery gap in the global economy with a Western core and a developing countries’ periphery (ibid: 140). This school of thought is similar to “dependencia theory” in IPE. The Dependencia School stresses the systemic constraints and pressures that the West has established through capital, organisation, technology and institutions aided by military strength. Together these arrangements function as the power base of the Western world.

The 2008-2011 price spikes appear to have had a profound impact on local decision-making (Gourevitch 1978). Others go even further and ascribe the most dominant force of the global economy to, Western, imperialism. Investment in land through the lens of these schools would be a way to counter (Western) political economic hegemony (Sojamo et al. 2012). The proponents of the interdependence school share the same notion on the outlook of the international political economy. Nye, Keohane, Karl Kaiser and Edward Morse attribute transnational, international and multinational actors and global, non-military forces such as technology, trade, communications, and culture, a major role in shaping national and foreign policy (quoted in Gourevitch 1978: 893). In

such analysis emphasis is placed on international regimes, instead of merely state power.

Harriett Friedmann and Philip McMichael have applied interdependence theories to the global food question (McMichael 2009; Friedmann 1978; 1987; 1993; McMichael and Friedmann 2005). Three “food regimes” have thus far shaped the global political economy. Taking a structuralist approach to analysing global capitalism applied to food politics, McMichael identified a first “food regime” from the 1870s to the 1930s, characterised by colonial imports in the form of grain and livestock from tropical zones. A second (post-World War II) regime re-routed flows of (surplus) food from the United States to its informal empire of postcolonial states in accordance with the strategic perimeters of the Cold War (McMichael 2009: 141-144). This regime was the defining “food regime” during the era of economic development advocated and administered by the Western world. As Friedmann pointed out:

*“The post-war “food” regime was governed by implicit rules, which nonetheless regulated property and power within and between nations. The “food regime”, therefore, was partly about international relations of food, and partly about the world food economy. Regulation of the “food regime” both underpinned and reflected changing balances of power among states, organised national lobbies, classes – farmers, workers, peasants – and capital. The implicit rules evolved through practical experiences and negotiations among states, ministries, corporations, farm lobbies, consumer lobbies and others, in response to immediate problems of production, distribution and trade. Out of this web of practices emerged a stable pattern*



*of production and power that lasted for two and a half decades. The rules defining the “food regime” gave priority to national regulation, and authorised both import controls and export subsidies necessary to manage national farm programmes. These national programmes, particularly at the outset of New Deal commodity programmes, generated chronic surpluses. As these played out, they structured a specific set of international relations in which power – to restructure international trade and production in one state’s favour – was wielded in the unusual form of subsidised exports of surplus commodities. In this way agriculture, which was always central to the world economy, was an exceptional international sector” (Friedmann 1993: 31).*

The second “food regime’s” defining feature was the protection of the agricultural markets by subsidies and large-scale industrial agro-production, which over time was refined to a shape that can be recognised in how the world looks today. The currently emerging third “food regime” has incorporated more regions around the globe especially into the animal protein based supply chains and the supply chains in which supermarkets play a pivotal cornerstone (Teubal 1993; McMichael 2009). “Food regimes” can therefore be interpreted as cultural political economic arrangements that shape the international political economy of food, food trade and also investment in farmland.

It must be noted that the application of “food regime” theory provides studies on food politics with a new analytical frame. Its structural, strategic perspective also highlights questions such as the extent to which the “food regime” defines current and future

international relations at a time of environmental change. With neoliberalism in crisis - as explained further above - the current global political-economic order that rests upon a “corporate food regime” may be already facing new challenges.

Water scarcity may function as a driver for water-stressed economies to challenge the current global food order. The water scarce economies have been forced find and evaluate alternative ways to provide food and water security. Hence, the expansion of the range of choice to agricultural investments to “import” virtual water from African economies. Investigating and adopting the farmland investment and virtual water “import” choice could be a refinement of, if not a departure from, the current neoliberal agricultural order based on Western “free trade” notions. The theoretical concepts of IPE that underpin this potential attempt to challenge or alter the global order will be presented in the following section.

Although not explicitly linked to nationalism/economic realism, the national interest and virtual water play an important role in the IPE of natural resources. Due to the challenges resulting from population growth and climatic change, IR writers have embraced ecology to identify and assess new environmental threats to national security (O'Tuathail 1998: 194). In his influential 1994 article “The Coming Anarchy”, Robert D. Kaplan proposed that population increase, urbanisation, and the incidence of resource depletion were responsible for undermining fragile governments across the developing world and were serious security threats to the Western countries. A number of writers have therefore reached for Neo-Malthusian arguments to predict water wars in the course of the 21<sup>st</sup> century. A widely known “water war rhetoric” emerged in the

1980s as a consequence of a number of publications that have predicted armed conflicts over water (Cooley 1984; Starr 1991; Gleick 1993).

The rationale behind this 1980s literature writings can be attributed to a belief in realist approach of analysing international politics. However, others (Allan 1997; 2002; Selby 2005) have alluded to the availability of liberal alternatives such as virtual water “imports” and the resulting low estimation of the importance of water in the political economies of the Middle East and elsewhere. As Allan (2002) remarks, “the social adaptivity to water scarcity decreases the threat of armed conflict over it”. Investment in farmland may be a further pragmatic shift in the social adaptivity to water scarcity of the two countries analysed could decrease the risk of armed conflict over water resources through the expansion of the range of choice to virtual water “imports”. Having introduced the concept that will be applied to analyse the drivers of investment, it is important at this stage to outline the conceptual limitations of the range of choice.

#### **4.6. Limitations of the range of choice**

An important feature of White’s range of choice concept is the role of the limitations of the theoretical range of choice that then feeds into the practical range of choice of a policy option such as FDI in land and water resources. Since agriculture is a complex field, the limitations stem from different disciplines. Eclecticism, already mentioned, will guide this study to generate useful ideas and evidence to identify the Pragmatism of investors. The factors that limit the perceived opportunities in farmland investment in Sudan will be explained through development politics and sociology, and environmental science.

#### **4.6.1. Development sociology**

The first source of theory that is used to explain the limitations of the range of choice is development sociology, which is a sub-field of sociology that analyses societal development in the global south. One of the founding fathers of the discipline was Gerhard Lenski, on whom the discipline still heavily relies to account for the social structures in so-called “agrarian societies”.

Agrarian studies are defined as the “inquiry into rural societies” (Scott 2001: 2). For agrarian societies such as Nahr an-Nil state in Sudan the primary means of subsistence is the cultivation of crops using a mixture of human and non-human means. The “politics of the rural” (Woods 2007: 2) has gained increased interest among scholars working on African political economy due to the importance of the countryside for economic development. As Bernstein points out, agrarian political economic studies shed light on four key questions: Who owns what? Who does what? Who gets what? And what do they do with the surplus wealth (Bernstein 2010; Borras et al. 2010: 575)? These key questions have been interconnected with human rights in development to highlight the significance of the social environment in the African countryside (Woods 2007: 2-4; Borras et al. 2010: 575-578; Bernstein 1992: 65). Agrarian societies are deeply linked with the history of capitalism in Africa. As Bernstein notes, Sub-Saharan African agrarian societies were characterised by high levels of diversity, before European powers colonised the continent to export agricultural produce during the first “food regime” from Africa to Europe. “Classless societies” were invaded by European powers that exploited Sub-Saharan economies for financial and political reasons. The colonial state delivered “law and order” turning Africa into the poorest continent on the planet (Bernstein 1992: 66-67).

Agrarian studies provide a critical account of past and current developments in rural societies. As Borras et al. (2010) and Palmer (2010) point out, the influx of capital from investing economies such as the two analysed in this study may be a new form of “colonialism of the twenty-first century” affecting subsistence farmers and rural societal relationships. As Chapter 3 showed, the literature on this topic has exponentially increased over the past five years. However, the grave concerns of development sociologists and experts of law with regard to “colonialism” (Palmer 2010), “human rights violations” (Borras et al. 2010) and legal problems (Cotula 2009) around land investments will be expanded by this study.

#### **4.6.2. Development economics**

Another important theoretical field that will be deployed to explain the factors limiting the range of choice is development economics. Debates in development economics have centred around economic growth with a focus on institutions and “sound” economic policy measures. The classical economic thinkers such as Adam Smith and John Stuart Mill assumed that the desired output of economic growth could be achieved from any economy with the right supply of labour, abundant capital stock, technological innovation, and the right amount of land and natural resources such as water (McKay 2011: 142). This strand of classical thinking that focused entirely on supply-side economics was later expanded by American economist Robert Solow (1956), who heralded the neoclassical school by arguing that in a competitive capitalist economic system, labour and technological progress are exogenously determined and grow at a constant rate.

Other development economists who challenge this “one size fits all” notion of development, have increasingly criticised the neoclassical thinking of Solow, as being too “simple” to account for all factors determining economic growth (Pessarides 2000: 16; McKay 2012: 138). A very important factor to take these criticisms into account is the role of human capital. It is also of high relevance for the analysis of the limitations of the expansion of the range of choice to farmland investments. Critics of the neoclassical school of development economics have highlighted the crucial role of human capital and thus improved education. Nelson and Phelps (1966), Barro (1991), and Benhabib and Spiegel (1994) have pointed out that human capital should not be viewed as another factor in economic growth accounting due to its important role in developing countries such as Sudan. This study will refer to human capital in the form of agricultural skills in Chapter 8 to analyse the impact of agricultural skills in Sudan on the feasibility of Jordanian and Qatari FDI in Sudanese land and water resources. However, the limiting factors of the expansion plans of the range of choice further touch upon development politics, namely governance.

#### **4.6.3. Governance**

Governance of land and water resources in Sudan is an important potential limitation to the range of choice. Governance is a broad topic. While it was long associated with the exercise of power by government and thus political leaders, it re-emerged during the 1980s with a new meaning that was broader than government (Kjaer 2004: 3). Although no universally agreed definition exists, the broadened meaning of governance seeks to incorporate references to processes and actors outside the narrow realm of government and in particular those actors and processes of the market (Kjaer 2004: 3-4).

An ongoing leitmotif for political and economic theorists working on governance has been the idea of global political integration to enable global governance to include systems of rule at all levels of human activity in which the pursuit of goals through the exercise of control has transnational repercussions (Rosenau 1995: 13). Modern governance concepts adopted by Western international organisations and donors are often strongly connected to democratic principles with the intent of ensuring the participation of civil society (OECD 2002; USAID 2013).

In spite of the ambitious goal of some theorists to devise governance concepts for the global arena, the political-economic gap between industrialised, democratic states and developing economies still persists. Thus, such Western-centric views on governance have not provided a meaningful contribution to the analysis of the expansion of the range of choice by Jordan and Qatar to access Sudanese farmland water. Despite Sudan's superficial democratic constitution, it is widely considered to be an authoritarian regime with all effective power obtained by the President and his ruling party.

Governance in Sudan has been exercised in a different mode from that neo-liberal model. Chalmers Johnson (1982) was the first to point at these contradictions of the governance concept in authoritarian-prone regimes. He was the first to introduce the concept of the "developmental state" in his classic study on the Japanese car industry. The developmental state has the overriding goal of achieving national economic development rather than advancing Capitalist interests. Export-led growth devoted to free market principles guides the developmental states' political strategies, which are conceived and exercised by a small economic elite of bureaucrats recruited from the

managerial talent available (Johnson 1982). Johnson's findings have been expanded by Wade (1993) and Evans (1995) to point out that a developmental state not only needs to be able to intervene in the economy but also to coordinate with societal actors from the "shadow state". This structural phenomenon has been called "embedded autonomy" by Evans (1995) to show that embeddedness is needed because ties of the government with society provide information and implementation of economic strategies.

It is argued that "embedded autonomy" in Sudan's agricultural policy plays a paramount role in the specific way in which Sudanese land and water resources are governed. It will also help to understand the potential governance limitations of the expansion plans of the range of choice by Jordan and Qatar. Apart from political and economic factors, the potential limits of the range of choice concept must also include a consideration of environmental constraints. The theoretical background literature on environmental factors limiting the range of choice will be illustrated in the next section.

#### **4.6.4. Environmental factors**

The two final factors that explain the potential limitations of the range of choice concept stem from the broad field of environmental sciences. Environmental outcomes of real world decisions such as expanding the range of choice to farmland investment can be projected through modern tools such as environmental modelling. An environmental model is an abstraction of reality (Mulligan and Wainwright 2013: 8). It models complex reality in the simplest way to make it adequate for the purpose of understanding processes and possibly predicting outcomes. Such modelling can be useful when developing and testing a theory such as the theoretical frameworks introduced above. Using data and information from information technologies, satellite



imagery and mathematical expertise, modelling can provide a “rational basis” for the interaction of the environment, ecosystems and human and animal populations (Cross and Moscardini 1985: 22).

An environmental model for the impact of an investment decision such as the expansion of the range of choice to food production in Sudan can be developed to investigate the enhancement and degradation of resources through human activity. It must be noted that all environmental models have errors in measurement and validity due to the nature of environmental systems and scientific practice. Environmental modelling, however, only serves as a contributing scientific method to analyse the potential impacts of farmland investments by Jordan and Qatar. The main point of using environmental modelling as a tool for illustrating the potential outcomes is to generate an observation with the currently available tools to investigate the impact of agricultural investment on water resources availability in the two investment regions in Nahr an-Nil state in Sudan. Modelled environmental outcomes will feed into the application of another theoretical tenet in environmental studies: hydropolitics.

Hydropolitics or water politics is the politics of water resources. The term was originally coined by John Waterbury in 1970 in his book *The Hydropolitics of the Nile Valley* in which he examined the water politics of Egypt and Sudan (Waterbury 2002: 4). Hydropolitics was later applied and appraised by scholars from different academic backgrounds to frame it within other fields of the social sciences. As Wegerich and Warner (2010: 4) quoting Warner and Zeitoun note, water politics is not well-defined because the few studies that have been written on the topic tend to be by geographers, civil engineers or law experts. Turton defines water politics as “the authoritative

allocation of values with respect to water in society” (Turton 2002: 16). Mollinga on the other hand refers to water politics as the “contestation of water resource planning and use” (Mollinga 2001: 735). While Mollinga focuses on the resource management itself (being an engineer by training), the political scientist Turton pays attention to the outcome of political processes – the social order (Wegerich and Warner 2010: 4). Turton further stresses that he sees scarcity as the main driver of the politicization of water resources management (Turton 2002: 13).

These definitions have been further expanded and applied in international relations. Most notably, Allan (2002), Zeitoun and Warner (2008), Mirumachi (2007) and Cascao (2009) applied the politics of inter-state relations to the politics of water resources in river basins such as the Nile, Mekong and Jordan, to provide an improved understanding of how water is politically managed and contested by decision-makers in different states.

There is a dynamic debate around transboundary water relations. However, all of the current debates share a common understanding that water relations are shaped by the riparians of rivers or lakes. Investigating the link between the external actors (investors) in a river basin through expanding the range of choice of a non-riparian state has not been covered by the literature.

An original contribution of this study is in introducing the range of choice concept into the current hydropolitics theory. It will be shown that an external actor - an incomer to a basin, in this case the Nile, impacts in the current power relations. This potential limitation of the range of choice concept will guide the final part of Chapter 8, which

sheds light on the Pragmatism of the political decision makers in charge of investment portfolios in Jordan and Qatar. It will be shown that the use of an eclectic suite of concepts explains in a new way the limitations of the range of choice concept.

#### **4.7. Concluding remarks**

This chapter has introduced the theoretical framework deployed to analyse the recent phenomenon of farmland investments by Jordan and Qatar. It has identified the pragmatic range of choice concept as a useful mode of inquiry for understanding the alternatives available for Middle Eastern decision-makers in food and water. However, given the criticisms of Pragmatism, the study also uses two critical concepts, “food regime” theory and the “shadow state” concept to illustrate the role of power that is always behind a political decision-making process such as the range of choice. This theory will enable the study to take the criticisms of American Pragmatism into account to provide a comprehensive analysis of how decisions in water and food are being made in the twenty-first century. The chapter has also introduced several concepts that will be applied to explain the limitations of the range of choice. Agriculture and water resources management is a complex topic that encompasses several disciplines. It will be shown in the empirical chapters that the expansion of the range of choice touches upon a large number of concepts. The chapter concludes that international and domestic politics are based on political and economic power relations. Power relations must be conceptualised through critical concepts such as “food regime” theory and the “shadow state” concept to fully account for Pragmatism’s focal point of “growth” through “the lived experience” that shape its epistemology. The next chapter will introduce the methodology of how the influence of power relations that shape the range choice has been investigated in the course of the research.

# CHAPTER 5:

## RESEARCH METHODOLOGY

## **5. RESEARCH METHODOLOGY**

### **5.1. Introduction**

This chapter explains the methodology that has been deployed to understand the term “range of choice” which in this study is used to mean range of policy choices that address the food and water security of Jordan and Qatar. The analysis focuses on the agricultural investments in Sudan as an alternative to managing indigenous water resources and global commodity trade. To help the reader understand my approach, I will first describe the philosophical underpinnings of the methodology and why a pragmatic mode of enquiry has been favoured over other approaches. Secondly, the chapter will show how the diverse methods that have been deployed have complemented each other to answer my research questions. At the same time, there will be a critique of the merits and problems associated with each element of the method. Thirdly, the different techniques that have been tested and used will be exemplified and reviewed to provide the reader with the required information on the timeline and setting of the study and the research process. It will also justify why key-informant interviews and case studies were the most appropriate techniques to investigate the range of choice. Fourthly, the ethical considerations of the research will be presented. Finally, the chapter will introduce the research questions and hypotheses of the study to highlight the relevance of the alternatives in the range of choice available to Qatari and Jordanian decision-makers in the public and private sectors. The last section will also show which methods have been used to answer each of the research questions.

## **5.2. The philosophical underpinnings of the study**

The study topic is what Katzenstein and Sil refer to as a “real world” problem. Water and food security in the Middle East are among the most pressing topics that need to be addressed by the governments and societies of the region now and in the years to come. The topic is embedded in what has been called a “sanctioned discourse” which is the focal point of water policy formation derived from the social structures of the state (Allan 2002; Jagerskög 2003). To obtain information on such a topic is difficult because it is scarcely available. Water and food politics in the Middle East are highly politicised but not discussed in the public realm. Hence, the discourse on water and food policy is subject to power struggles of competing elites within the shadow state, which are not shared with the public. As a result of the prevalent “sanctioned discourse”, the question “how to” find the information on Jordanian and Qatari investments in Sudanese farmland was evident because of the opaque nature of politicised issues such as water and food security.

An important feature of the study has been its involvement in the very early phases of an area of interdisciplinary research on the political economy of water resources and of the environment more generally that had not received significant attention since the global energy market crisis of the 1970s. Commodity prices of staple foods such as cereals and meat in almost all global markets spiked twice in the 1970s and twice again in 2008 and 2011.

When the study started, research on farmland investments was in its early days. In some cases, as we now know today, research and scholarship grossly exaggerated the scale

and impact of investment (Rural Modernities 2012, Rulli et al. 2012). I opted for a pragmatic mode of enquiry to avoid the misleading outcomes of the early unsatisfactory attempts to develop metrics and collate evidence that were used to construct certain scenarios affecting the livelihoods of millions of people. Instead of being “caught” in the net of the currently often misleading academic discourse, which has tended to emphasise the investment hype at one extreme and the human rights voice at the other, this study deliberately seeks to be both dialogical and experimental (Land Matrix 2013; Rulli et al. 2013; Deininger et al. 2011; Palmer 2010; Cotula et al. 2009).

The overarching methodological approach to the study is derived from Pragmatism. What Friedrichs and Kratochwil (2009) describe as “pragmatism in practice” is a method to explain the social world through practical reason, which is how the researcher has approached his study to find truth to describe the pragmatic action of those analysed. A topic like the complex range of choice is ill equipped to be grasped through a standard methodology using ontological realism or correspondence theory, which assume the social world is based on facts or that propositions are true when matched with reality (Moses and Knutsen 2007; Friedrichs and Kratochwil 2009). A pragmatic methodological approach deliberately avoids these debates by focussing on practical reason that allows the researcher to find an optimal strategy to analyse the chosen topic. I have decided to analyse the range of choice of alternatives to demand-side management in Jordan and Qatar through a pragmatic methodological lens because I opted for a focus on practical reason to explain the motivations of decision-makers and the limits of nature. As Katzenstein and Sil (2008) and Friedrichs (2009) propose, Pragmatism is a useful methodological tool to provide explanations for new and under-

researched social phenomena. With its de-emphasis of ontological and epistemological debates, it offers the researcher the opportunity to deploy analytic eclecticism as the preferred avenue, not only to explain new developments in international politics, but also to offer new thinking on the social world around us (Katzenstein and Sil 2008, 2010, Sil 2009). Analytic eclecticism is a uniquely pragmatic method in line with the philosophical tenets of Pragmatism to take a practical approach to a real world problem such as the alternative options to achieve water and food security in Jordan and Qatar through expanding the range of choice to farmland investments.

*Analytical eclecticism points to a problem-driven approach that puts the burden on the investigator to demonstrate how and why the choices and actions of agents reflect, reproduce, or transform emergent patterns of social norms and structures. While this implies an epistemological agnosticism that makes analytic eclecticism unsuitable as a unifying paradigm, it also leaves open the possibility for exploring the variety of complex processes that cut across or connect multiple levels of analysis and multiple dimensions of social action within a given context (Sil 2000: 649).*

The complex processes that cut across or connect multiple levels of analyses and multiple dimensions of social action within a given context contextualise the range of choice of those seeking to establish and sustain food and water security. The lived experience of my research to explain the drivers of inward investment in water and land in other developing countries in my opinion requires analytic eclecticism. As Friedrichs (2009) points out, “the idea (of analytical eclecticism) is to combine existing research



traditions in a pragmatic fashion and thus enable the formulation and exploration of novel and more complex sets of problems”. Such an approach requires a high level of self-reflection from the researcher to avoid the watering down of the study to a too loosely combined set of theories.

In accepting the pragmatist-prone research strategy of analytic eclecticism for the analysis of the range of choice, the research methods deployed may also be eclectic. I therefore employed a two-fold strategy. Qualitative methods and quantitative methods served as the point of departure of my research to bridge the gap between American and European schools of international relations/international political economy (Ravenhill 2007). Qualitative research methods in practice reveal not only the metrics of the measurable but also tacit knowledge of the social world (Crang 2002: 648). Such methods can never lead to a universal epistemology of the studied topic, but do make it possible to adopt Geertz’s suggestion that human geography should “not be an experimental science in search of law but an interpretative one in search of meaning” (Geertz 1973: 5). However, being interpretive also embeds a general trend towards a reduced attention to action and practice. While the European schools focus on qualitative approaches, the American school has developed a quantitative analysis of political sciences (Ravenhill 2007). The study will apply quantitative approaches in a descriptive manner only. The main method as is explained in the coming sections will be qualitative. In order to avoid reduced attention to action and practice, I chose the quantitative and qualitative methods to analyse the range of choice. In this study comprehensive information on global food commodity trade is not publicly available. It is well understood by the private sector traders but not by governments and those

outside the inner circle that steers the global food system (McMichael 2009; Teubal 1993). They also operate an asymmetric global market in which they enjoy a high level of market power. Global financial markets and their investing arms enjoy a similar - though often less well known - level of market power.

### **5.3. Quantitative approaches**

The first method to be introduced is quantitative data analysis. The study uses statistical models from web-based data-bases on agriculture such as COMTRADE; and water resource modelling related to commodities such as the Water Footprint Network and Water World; and selectively and critically evaluated data from the Land Matrix (see section 5.6. on triangulation) on land deals in Africa. Since statistics is the “study of uncertainty” (Lindley 2000), it is inherently flawed as a comprehensive basis for the analysis of the range of choice of two Middle Eastern economies.

Trade and environmental data will be interpreted in an indicative way because of the severe limitations of economic and environmental data in agriculture, trade and virtual water flows in the region. However, statistical analysis is important in estimating the levels of uncertainty, which define the range of choice. If we, however, accept uncertainty as the defining feature of the range of choice in the two analysed economies, we need to deploy methods that interpret and explain the indicative metrics. Therefore, the study emphasises the use of qualitative methods to answer many of the research questions identified at the end of this chapter. The study will use quantitative methods to shed light on the statistical underpinnings that define the range of choice. More

importantly, the available metrics will feed into the case study evidence to explain the environmental limitations of the range of choice.

As mentioned above, the study emphasises the use of qualitative methods to answer the research questions illustrated at the end of this chapter. Nevertheless, the study will use quantitative methods to describe the statistical underpinnings that define the range of choice. More importantly, it will feed into the case study approach of this study to explain the environmental limitations of the range of choice.

#### **5.4. Case study approach**

The case study approach can be defined as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used” (Yin 1984: 23). The two case studies used in this study will use the Water World database to explain the limitations of the range of choice due to uncertainty derived from climate change and its impacts on water resources in the targeted economies. The WaterWorld case study approach can be defined as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used” (Yin 1984: 23).

The case studies used in this study will use the Water World database is used for the “to explain the limitations of the range of choice due to uncertainty consequent on climate change and its impacts on water resources in the targeted economies. The two case studies, i.e. Jordan project in Ad-Damar (Sudan) and the Qatari project in Abu Hamad (Sudan) will be introduced in Chapter 8. The Water World database used in the case studies “is a simulation for the development and implementation of land and water related policies globally, enabling intended and unintended consequences to be tested *in silico* before they are tested *in vivo*. It incorporates detailed spatial datasets at 1- square km and 1 hectare resolutions for the entire world, spatial models for biophysical and socioeconomic processes along with scenarios for climate, land use and economic change. A series of interventions (policy options) are available which can be implemented and their consequences traced through the socio-economic and biophysical systems. The model integrates with a range of geobrowsers for immersive visualisation of outcomes” (Bruijnzeel and Mulligan 2010; Mulligan and Burke 2005).

A geospatial expert at King’s College was provided with the coordinates of the two projects named above to run a simulation for the different agricultural investment projects. The two case studies will analyse the planned mega-projects of Jordan and Qatar in Sudan on the allocated land. As of now, only those two land plots have been allocated for both investing countries according to the collected data. The case studies provide the reader with descriptive information on how the expansion of the range of choice to farmland investment in Africa is impacted by environmental factors, which are used indicatively as they are statistical data on food trade and virtual water “flows”. The study will therefore use quantitative data in a descriptive way to explain indicative

trade flows and potential climatic scenarios where it is useful to explain the economic and environmental fundamentals and costs of the range of choice. However, a sole use of quantitative “rationalistic” research methods does not provide a useful methodology framework for a study concerned with “why” and “how” of agricultural investments. Therefore, the main method to explain the drivers will use a qualitative approach. Qualitative research methods in practice reveal tacit knowledge on the social world (Crang 2002: 648). Such methods can never lead to a universal epistemology of the studied topic but in order to avoid reduced attention, I decided to use a wide range of qualitative methods to analyse the range of choice in Jordan and Qatar.

### **5.5. Qualitative Methods: the main research method**

This section will introduce the qualitative methods deployed in the study. Human geography has witnessed an expansion of qualitative research methods in the past two decades to respond to a growing need of “seeing economic activity as a set of lived practices, assumptions and codes of behaviour” (Crang 2002: 648). As mentioned in the theoretical framework chapter and above, philosophical Pragmatism is problem-driven and concerned with “real world” phenomena. The pluralistic, problems-oriented environment we live in is best captured by the experiences of participants. In order to explain the “real world” problem of the range of choice, the study makes use of qualitative methods with a particular focus on interviews as the primary method of inquiry.

### **5.5.1. Target groups**

Economic activities such as farmland investment are exercised by a very limited number of political and business elites in the two studied countries. Observers of decision-makers, such as international experts working on food and water, academics, researchers and journalists, are also part of the intellectual and economic elite although usually differently inspired and normally less informed about the levers of influence and power than the practitioners.

The main target group of the study were key informant elites that are responsible for, or observe, decision-making processes around water and food. A substantial part of the literature by political scientists is concerned with the study of decision-makers; hence interviewing of elites is crucial to gain the desired information. The first step for researchers using elite interviews as their key-method is to identify the people “who matter” in the studied field. Second, and probably the most demanding task, is to gain access to them. Third, and by no means less important, is the quality of the interview, which fourth, must then be thoroughly analysed (Burnham et al. 2004: 206).

### **5.5.2. Time frame, setting and scope of the interviews**

Identifying key informants in agricultural investment in Jordan, Qatar, Sudan and South Sudan posed a crucial challenge from the outset of the study. My choice to deploy a pragmatic methodology was useful in both identifying the key informants and also to gain access to them. In the pragmatic tradition, I pursued a “trial and error” strategy to

reach these two goals. Most interviews were conducted in office settings, e.g. at ministries, universities, research institutes, or non-governmental organisations (NGOs). When possible, interviews took place in more informal settings such as cafes, restaurants or hotel lobbies. Moreover, and as mentioned above, interviews including participant observation were conducted during several conferences. These included:

- 5<sup>th</sup> London Water Research Group Workshop on Hydro-Hegemony “Water Security – competing discourses”, 8-9 May 2010 at the University of East Anglia Campus in London
- Awakening Africa’s Sleeping Giant workshop in London, 21 June 2010 at the School of Oriental and African Studies (SOAS)
- USAID workshop on land rights in South Sudan, 1-3 September 2010
- First International Conference on “Land Grabbing” held at the University of Sussex in Brighton, 6-8 April 2011
- Water-Food-Climate nexus workshop on the Nile/Greater Horn of Africa, Khartoum 11-13 May 2011 at the Ministry of Water and Irrigation of the Republic of Sudan
- XIVth International Water Resources Association (IWRA) World Water Congress, 25-29 September 2011 in Porto de Galinhas, Brazil
- The Public Ledger Agriculture Investment 2011, 5-6 October 2011 at the Grange Tower Bridge Hotel in London
- Stockholm International Water Institute (SIWI) World Water Week 2012 in Stockholm, 26-31 August 2012 (organisation of the seminar on “Inward investment in land” – misleadingly called “land grabbing”)

- First Conference on Food Security in the Dry Lands (FSDL), 14-15 November 2012 in Doha, Qatar (co-organiser with the Qatar Environment and Energy Institute of the third theme “Responsible investment in land”)

With regard to the time frame of this study, I concluded my research in August 2012 after the World Water Week in Stockholm. I used the meeting in Qatar and to conduct final follow-up interviews with investors in farmland and for participant observation.

### **5.5.3. Participant observation**

Although initially applied in anthropology, participant observation has become a common method across the social sciences since the 1970s. Participant observation is distinguished from other techniques of social and political research by the active participation of the researcher in the social context under observation (Ross and Ross 1974: 68; Tedlock 1991). Participant observation may reveal patterns of behaviour of actors and participants in a social phenomenon, such as farmland investment, which other methods cannot address. For analysis of the range of choice, it was useful to observe the behaviour of investors, implementers of farmland projects or representatives of targeted economies. In particular, the Food Security in the Dry Lands Conference in Doha provided several opportunities to observe the engagement of actors involved in farmland investments. My convening and organisational roles in facilitating the inward investment in water and land element of the conference further allowed unique insights into the role of the different actors. In addition, meetings with investors, representatives target economies and implementers revealed behavioural patterns that has helped to explain the motives, knowledge - often limited - and capacities - again often limited - of



the different actors. However, gaining access to key-experts involved in farmland acquisitions was one of the major concerns of the study. The next section will show how I prepared for fieldwork.

#### **5.5.4. Fieldwork preparation**

Since I had not conducted fieldwork in Sub-Sahara Africa before researching the expansion of the range of choice of Jordan and Qatar to East African “virtual water imports”, I thoroughly prepared the several investigation stages. Prior to fieldwork, I successfully applied to the Land Deals Politics Initiative (LDPI) to obtain a travel grant of US\$ 2000 for research on land investments in Sudan (LDPI 2010). I also organised the London Water Research Group workshop on “Hydro-Hegemony” in May 2010 where I invited representatives from international organisations and the private sector to discuss “land grabbing” (LWRG 2010). In July 2010, I travelled to Rome to interview key experts at the Food and Agriculture Organisation of the United Nations (FAO) and the International Fund for Agricultural Development (IFAD) as well as to ask for contacts in East Africa. The contacts gained through these networks enabled me to identify key-informants before fieldwork in East Africa and the Middle East.

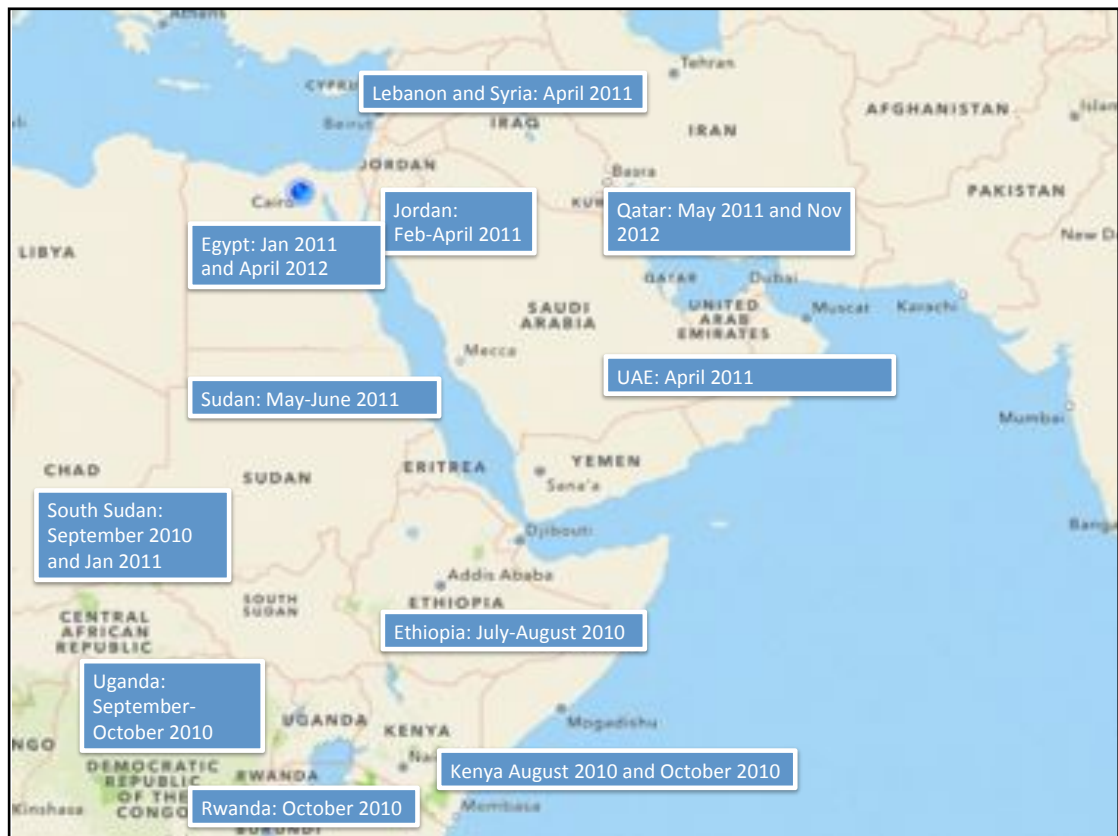
#### **5.5.5. Three fieldwork stages**

Key-informant interviews on the ground took place in three research stages. First, fieldwork in Ethiopia, Kenya, South Sudan, Uganda and Rwanda was carried out to obtain a general picture on land investments in East Africa from July 2010 to October

2010. It is important to remind the reader that at this stage concrete information on Jordanian and Qatari land investments was extremely scarce, in contrast to the many rumours published in both the technical and the popular print and e-media and in the grey literature (Farmlandgrab database 2013; Deininger et al. 2011). Some newspaper articles hinted at investment of Middle Eastern investors in Kenya or Ethiopia, other media mentioned South Sudan, Uganda or Rwanda (Ratio Magazine 2010; Lepeska 2010). I deliberately took a broad approach to test and verify hypotheses on the scale of investments. Bearing the pragmatic research methodology in mind, I decided on the ground in East Africa to travel to Uganda and Rwanda because key-informants recommended I interview experts at the Nile Basin Initiative in Entebbe, Uganda and the Equatorial Lakes Commission in Kigali, Rwanda. The second research stage took place in Egypt, South Sudan, Ethiopia, Jordan, Qatar, United Arab Emirates and Sudan to analyse the perceptions of decision-makers in the analysed countries as well as key-informants in neighbouring countries. Figure 5.1. illustrates the countries where I have conducted fieldwork.

My general strategy on the ground involved three major pillars:

- First, I interviewed international experts from donors, international organisations, journalists, academics and researchers.
- Second, with this above information in mind and often through an introduction by international experts, I interviewed government officials.
- Third, I interviewed farmers and investors in Ethiopia, Kenya and South Sudan to obtain a holistic perspective on the scale and implementation of farmland investments.



**Figure 5.1. Fieldwork map**

#### **5.5.6. List of interviewees**

The list of interviewees provided in the table in the references section at the end of this study, and the corresponding number will be used throughout the study to provide a means of citing the key-informant. In total, 130 interviews were conducted from July 2010 to August 2012, with four additional follow-up interviews and participant observation sessions prior and during the conference in Qatar in November 2012. Out of the 134 interviews, 42 were later chosen to be most appropriate for the analysis of the range of choice. This reflects the pragmatic “trial and error” strategy outlined in the introduction to this chapter. Although only one-third of the conducted interviews have been used in this study, the other two-thirds included interviews with informants in

Syria, Lebanon, Rwanda, Uganda and Ethiopia. Throughout the fieldwork stages the pragmatic “trial and error” strategy was deployed. The information gained through key-informants in the latter-mentioned countries proved to be very useful in gaining a comprehensive perspective on drivers for land investments in East Africa and the water resource contexts in the Middle East. However, since some of the answers would have extended the scope of the study to dimensions beyond the research agenda, hence they have not been included. The detailed roles and affiliations of the respondents will be disclosed to the examiners of this thesis prior to the PhD examination day.

#### **5.5.7. Techniques of interviews**

Since the objective of this study is to explain the drivers and impacts of farmland investment by Qatar and Jordan, the topic itself includes a large number of sub-themes. In order to allow the respondents to provide comprehensive answers, the most appropriate interview technique for this study was in-depth, semi-structured interviews. I deliberately chose to allow the respondent to talk without pre-determined limits by the investigator. The strength of an in-depth, semi-structured interview is that it enables access to gain access to sensitive and often confidential information. It also allows the investigator to show respect to the respondent by making him or her feel comfortable in sharing such information. The weaknesses of this approach are its time-consuming nature and the potential problem of manipulation and betrayal on both sides (Longhurst 2003). Although general questions were prepared in advance of the interviews, the experience showed that respondents often used this opportunity to provide long answers. The interviews included topical trajectories in the conversation that sometimes deviated from the prepared questions when I felt this was appropriate. In particular, the role of international “food regimes” on investment decisions led to very different, yet

often surprising answers that were then followed up during the interview through additional questions.

Interviews usually lasted between 30 to 90 minutes, during which I aimed to show my awareness of the importance of inter-subjectivity in engaging with the respondent and positioning myself in relation to the interviewee (Longhurst 2003). Given my strategy to first interview international advisors, journalists, academics and researchers, I used the first pillar of my research strategy to gain information to thoroughly prepare myself for the second pillar interviews with investors and decision-makers. In addition to the information from the first pillar of interviewees, I used the Internet to obtain further information about the interviewees from the second pillar of my strategy. Prior to the interviews with decision-makers, I identified themes and questions to discuss with the respondents. Notes were taken during the interviews, which were transcribed on the same day after the interview to allow answers and observations to be included in the interview transcription. This approach proved to be useful, as I became more confident over time to use the specific codified “agricultural investment” language, which is mandatory for interviews with key-informants in agricultural investment circles.

#### **5.5.8. Key-informant interviews: interviewing foreign elites**

The majority of interviewees on agricultural investment were Arab or African government or business elites, which posed a significant challenge to the interviewer. Interviewing foreign elites involves two key challenges that had to be addressed by the interviewer: first, elite interviews usually are embedded in complex and unstable power relations between the interviewer and the interviewee. Second, cross-cultural issues had to be considered when talking to members of foreign elites. Although there is a

significant group of scholars who associate elite interviews with particular challenges (Schoenberger 1991; Desmond 2004; Hertz and Imber 1995) other scholars have questioned the widely assumed distinction between elite and non-elite interviewees as target groups in social research (Smith 2006). If viewed through a post-structuralist lens, defining an “elite” may be problematic due to unclear definitions and identifications of the perceived elites. Although the interviewed elites may have power in society at large, they do not necessarily possess power in the interview space (Smith 2006: 651-652).

In the context of this research, my position as a Western outsider did not cause many problems during the interviews with members of the Jordanian, Qatari and Sudanese elites. To perhaps the surprise of the reader, the interviewees often felt less than competent when talking to a student of the environment they invest in or allow investment in. In most cases, the interview setting with the perceived elites was from the onset full of respect on both sides of the table. The use of in-depth, semi-structured interview techniques helped to move the topics discussed from a formal to a more informal tone, where informative answers were provided. It is, however, important to stress that there were distinct differences between Arab respondents in Jordan and Qatar and their Sudanese counterparts. While Jordanian and Qatari decision-makers were often surprisingly open about their conduct in East Africa in the course of the interviews, Sudanese decision-makers sometimes weighed their answers with extreme caution. The investor-investee dichotomy therefore played a greater role in the practice of interviewing decision-makers than power relations. The respect on the Jordanian and Qatari side for a researcher from the University of London and its global reputation

often became evident during the interview. I, as the investigator, was often viewed with respect due to my association with an institution with intellectual global impact.

A particular challenge noted in the course of the research was the widely used term “land grabbing” to label FDI in farmland. For example, one investor rampantly refused at first to speak to me and had to be calmed through assurances that “land grabbing” is only a term used by the academy and the media to describe a process of land acquisition of mainly poorly informed investors. Other interviewees in Qatar and Jordan used the opportunity to voice frustrations regarding the conduct of farmland investment in East Africa, perhaps in the hope that an outsider from the academy would be able to publish their frustrations.

On the Sudanese side, I was received with more scepticism due to the importance of FDI in agriculture for their economies. Decision-makers often claimed to be ignorant about investment procedures in their countries, which I could refute during the interview through specific questions informed by knowledge obtained from international experts, journalists and researchers. While the atmosphere with Arab investors could be eased through informality, Sudanese decision-makers could only be convinced through pre-knowledge on my side to prompt more substantial answers. Again, the pragmatic conduct of my research strategy helped to liaise with elites.

Another concern raised by social scientists, who have interviewed elites on their role in the manipulation of the investigator by the respondent (Schoenberger 1991). As mentioned above, many investors were often not well-informed regarding the environment they are investing in. For example, I was seen as an expert in a field they did not feel fully confident about: I was asked on three occasions whether I could

provide information on climate change scenario data for the targeted land plots by Jordanian and Qatari investors. In Sudan, four interviewees asked me to be introduced to potential farmland investors from the Arab world. I refused. The role of research ethics will be elaborated in a later section. Climate change scenarios will also be addressed through a case study approach, which will be outlined in the next section.

#### **5.5.9. Document analysis and historiography**

Primary and secondary sources of both past and present events, news and research reports were widely used to explain the range of choice. Historiography is “the study of the way history has been and is written (...) and the changing interpretations of those events in the works of individual historians” (Furay and Salevouris 1988: 223 quoted in Cascao 2009: 116). Farmland investment is not a new phenomenon; hence the study could draw on a limited number of key documents providing historical analyses of how the range of choice has been evolved and expanded in the past. This activity was of particular importance in explaining past perceptions of the international political economy of food.

Another important method used in this study is the document analysis of more recent work related to food politics in the Middle East and Africa. Most of the work on farmland investment, the global political economy of food and the role of large traders are published as “grey literature” (reports, declarations, official documents, online documentation). It proved to be very important to include such documentary sources in the analysis of the range of choice. Echoing the problem of utilising quantitative material in water resource management, much of the publication on food politics are either published in the media or by NGOs because of the highly politicised nature of the



topic. However, other researchers have also encountered similar problems (Ferragina and Greco 2008) Hence, it was important to take perspectives of an ongoing phenomenon such as farmland investment from as many sources as possible. Therefore, the next key method to be introduced is triangulation.

## **5.6. Triangulation**

Data regarding a highly political subject such as farmland investment collected from economies with low transparency rules causes many problems for the outsider researcher. As previously mentioned, at the outset of this study data on Jordanian and Qatari farmland investment were scarce, resulting in the questionable validity of the data. For example, it was not clear where investors have leased land in Sudan and to what extent the projects had been implemented. Thus, data triangulation was used as a core method to understand the extent of investments. Data triangulation involves using different sources of information in order to increase the validity of a study. These sources can be other stakeholders in such as participants, researchers, programme staff, and other community members, among others (Guion et al. 2012).

The study made wide use of data triangulation. Interviews with decision-makers in investing economies and researchers, journalists and government officials in targeted economies were the primary sources of enquiry regarding the areas where farmland had been leased. This information was verified through web-based databases such as the Land Matrix and the web database [www.farmland.org](http://www.farmland.org). While the International Land Coalition based at IFAD established the Land Matrix, [www.farmlandgrab.org](http://www.farmlandgrab.org) is hosted by an NGO called GRAIN that collects newspaper articles on the topic. In addition, given the novelty of the phenomenon, the analysis of other researchers has provided this

study with more confidence to reach its conclusions namely to what extent farmland investments are an extension of the practical range of choice.

### **5.7. Research ethics of the study**

An important part of any study is the ethical concerns that may arise during the research process. All interviewed respondents participated voluntarily. Before the interview, confidentiality according to the Guidelines on Good Practice in Academic Research was assured by handing out the King's College London interview consent forms.

Interviewees were informed they could withdraw at any time from the interview. It is important to stress that no respondent made use of his or her right to withdraw.

Due to the political nature of the study, participants were informed to remain anonymous. My concern with respect to potential repercussions of their expressed views within the two analysed economies was to give them the status of anonymity. Furthermore, names of investors and shadow state actors will not be disclosed to protect the interviewees. Due to the large number of public sector respondents I have decided that I carefully describe the politics of the range of choice. I have abstained from disclosing other names than absolutely necessary or specific affiliations that could be used to identify participants to outside parties.

### **5.8. Concluding remarks**

This chapter has introduced the different methods as well as the research questions and hypotheses deployed in this study. It has also shown why analytic eclecticism was used as the preferred methodological philosophy to guide the study. Research on a topic, which depends on partial and often flawed metrics, requires the study to pursue a "trial and error" strategy as outlined in this review of methodology. The diverse set of

methods will be applied in the empirical chapters to explain the range of choice of investing in Sudanese farmland in Jordan and Qatar. The next chapter will review and critique the global political economy of food and its impacts on the range of choice of investors and government in Qatar and Jordan. It will address Question 1 and Sub-Question 1.1 to analyse the influence of the “food regime” on the expansion of the range of choice.

# **CHAPTER 6:**

## **THE INTERNATIONAL POLITICAL- ECONOMIC DRIVERS BEHIND THE EXPANSION OF THE RANGE OF CHOICE TO FARMLAND INVESTMENTS**

## **6. THE INTERNATIONAL POLITICAL-ECONOMIC DRIVERS BEHIND THE EXPANSION OF THE RANGE OF CHOICE TO FARMLAND INVESTMENTS**

*“There isn't one grain of anything in the world that is sold in a free market. Not one! The only place you see a free market is in the speeches of politicians. People who are not in the Midwest do not understand that this is a socialist country”*

Dwayne Andreas, former Chief Executive Officer of ADM (Bovard 1995)

### **6.1. Introduction**

The aim of this chapter is to analyse the impact of the international political economy of food on decisions by decision-makers in Qatar and Jordan's to import food and water from Sudan. It will show how global systems and structures influence the expansion of the theoretical range of choice to include virtual water “imports” by engaging in farmland investments. Having introduced the theoretical framework in the previous chapter, this chapter will use evidence from fieldwork and other sources to determine the extent to which the inward investment in farmland in the Sudan by Jordan and Qatar is explained by “food regime” theory.

The analysis will address the first two research questions. When analysing the range of choice, the global arena of food politics must be included in the equation. The political context strongly influences the range of choice and on how alternative options are taken into account. The first question that is addressed is:

- “What is the role of the international “food regime” on the practical range of choice of Middle Eastern decision-makers?”

The hypothesis here is that all the Middle Eastern decision-makers investigated in this study are subject to pressures present in the international “food regime” that is still largely in the hands of Western agri-business (Murphy et al. 2012; Paarlberg 2010; McMichael 2012). Although food production takes place locally, the economic power of the corporate “food regime” impacts the choices available in the global political economy of food (Paarlberg 2010: 4-5).

The two countries analysed in this study are particularly vulnerable to the superstructure of the global “food regime” owing to the lack of water and investment in the agricultural sectors of the two countries of concern. The food price spikes in 2007/08 and 2010/11 reminded Middle Eastern decision-makers of their vulnerability and the way in which food can be used as a geopolitical tool by the “food bowl” Western economies (Woertz 2013)) This vulnerability led to their renewed interest in Sudanese farmland. It will be shown in the chapter that the rhetoric of the Sudanese “breadbasket” has been around for more than forty years (Woertz 2013; Verhoeven 2013) as a means of remedying food supply insecurity. The current investment plans are therefore not a new phenomenon and merely another bout of optimism on the perceived agricultural potential of Sudanese farmland that has proved to be unrewarding before.

Second, the analysis of global food politics begs the question:

- “What is the rationale of Qatari and Jordanian investors (and decision-makers) regarding investments in farmland overseas as a choice amongst their practical range of choice?”

The hypothesis of the second question is that the water resource scarcity of Qatar and Jordan influences the decisions to invest to grow food in Sudan that can secure virtual water “imports” as an alternative option to achieve food and water security in other ways. The two Middle Eastern countries are thus seeking to decrease their dependence on the global “food regime” with initiatives over which they believe they have control. Investments in Sudanese land and water will be shown to play a significant role in the expansion of the theoretical alternative range of choice to “virtual water imports”. It is a choice that aims to reduce dependence supposedly on the global “food regime”.

This analytical chapter uses extensive fieldwork completed in both East Africa and Middle Eastern countries between 2010 and 2012. A survey of mainly grey literature on the power of global “food regimes” in practice has also been carried out. Primary data derived from interviews with key informants in the investing economies will also be presented. Evidence from secondary literature is used to analyse the global agricultural trade superstructure to illustrate the vulnerability of the region to the global political economy of food.

The first sections will provide an overview of the position of the two countries to be analysed and of their position in the global “food regime”. This system will be illustrated through the explanation of agro-industrial food supply chains. The chains include at the top, consumers, who determine the nature of the demand for food commodities. They are served by private sector agents - retailers and supermarkets. These agents have contracts with traders, food processors and farmers. This material

will be followed by an analysis of the international superstructure of the relevant food supply chains and how it impacts on the two countries' range of choice. Next, the food price spikes of 2007/08 and 2010/11 will be identified. How they have impacted the global political economy of the international trade in food will be discussed. It will be shown how this period of instability has been perceived by the Jordanian and Qatari decision-makers and what options have been prompted. The chapter will end with a review of the perceptions of Qatari and Jordanian decision-makers on the "virtual water alternative" within the range of choice.

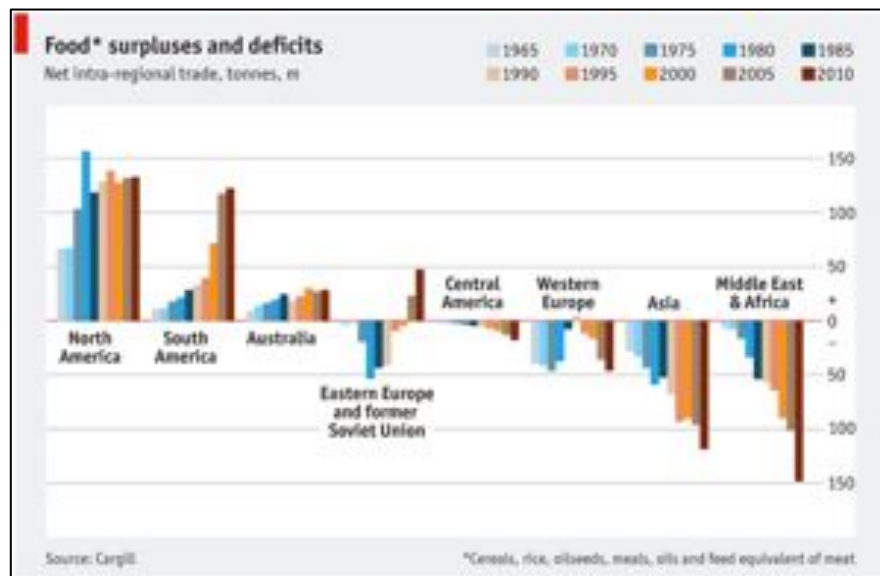
## **6.2. The global political economy of food and the Middle East**

As illustrated in chapter 2, Jordan and Qatar are exposed to severe physical water scarcity and at the same time have become very dependent on food imports, which have been subject to increasing market volatilities since 2006. Qatar and Jordan are as a result dependent on virtual water "imports" in the form of staple foods from the rest of the world to provide a remedy to this physical water scarcity. As Allan argues, the Middle East has traded itself out of this water scarcity predicament (Allan 2011). The lack of national water resources for agricultural production puts both economies in very dependent positions in relation to the global "food regime" over which they have no leverage. In this section, the question of what constitutes this current "food regime" will be addressed together with how it affects the theoretical range of choice in Qatar and Jordan.

As shown in review of the theoretical framework of the study in Chapter 4, "food regime" theory explains the strategic politics of global food and agriculture systems.



Those who operate these systems are experts in gaining access to natural resources such as water and fertile soils located in the so-called “food bowls” of the world. The world’s agricultural centres are located in regions of the world with food surpluses as shown in Figure 6.1.



**Figure 6.1. Food surpluses and deficits of eight world regions (*The Economist* 8th March 2013)**

The regions with food surpluses are geographically located in North and South America, Australia, the former Soviet Union and some countries in Eastern Europe and Asia. These are the regions from which Middle Eastern economies such as Qatar and Jordan have imported their food since the late 19<sup>th</sup> century (Allan 2002). The volumes of food imports have increased steadily over the past 100 years. It was estimated by Cargill that the Middle East as a region has alone imported 600 million tonnes of grain since the 1970s (*The Economist* 2013).

This trade has allowed the Middle East to enjoy a version of food and water security. The apparent security is meaningless, however, without an awareness of the “nodes of power” within the agricultural and trading sectors of the world’s “food bowls”. The power relations in these “food bowls” have dramatically shifted from public to private governance especially since the early 1980s (Hendrickson et al. 2008). The agricultural sectors in these regions have been restructured over the course of the twentieth century to by the corporate sector that operates the third “food regime”. The first British-led “food regime” imported tropical foodstuff from British colonies to India and lasted from the 1860s until the 1920s. The second, American development-led “food regime” was in place from the 1940s to the end of the 1970s. The current third corporate “food regime” has developed since the early 1980s. It is argued in this chapter that the present corporate third global “food regime” imposes both severe pressures as well as significant constraints on the expansion of the theoretical range of choice in Qatar and Jordan. The “nodes of power” within the global “food regime” and the agents that operate within it are identified and analysed in the next section.

#### **6.2.1. The food supply chain – the metabolism of the corporate “food regime”**

One cannot understand the power of the global “food regime” over the theoretical range of choice of Qatar and Jordan without illustrating the role of global food supply chains at the outset. Trade in food commodities in the global “food regime” is carried out in food supply chains, which have been defined as *“a set of three or more entities (organizations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and/or information from a source to a customer”* (Mentzer et al. 2001: 3).

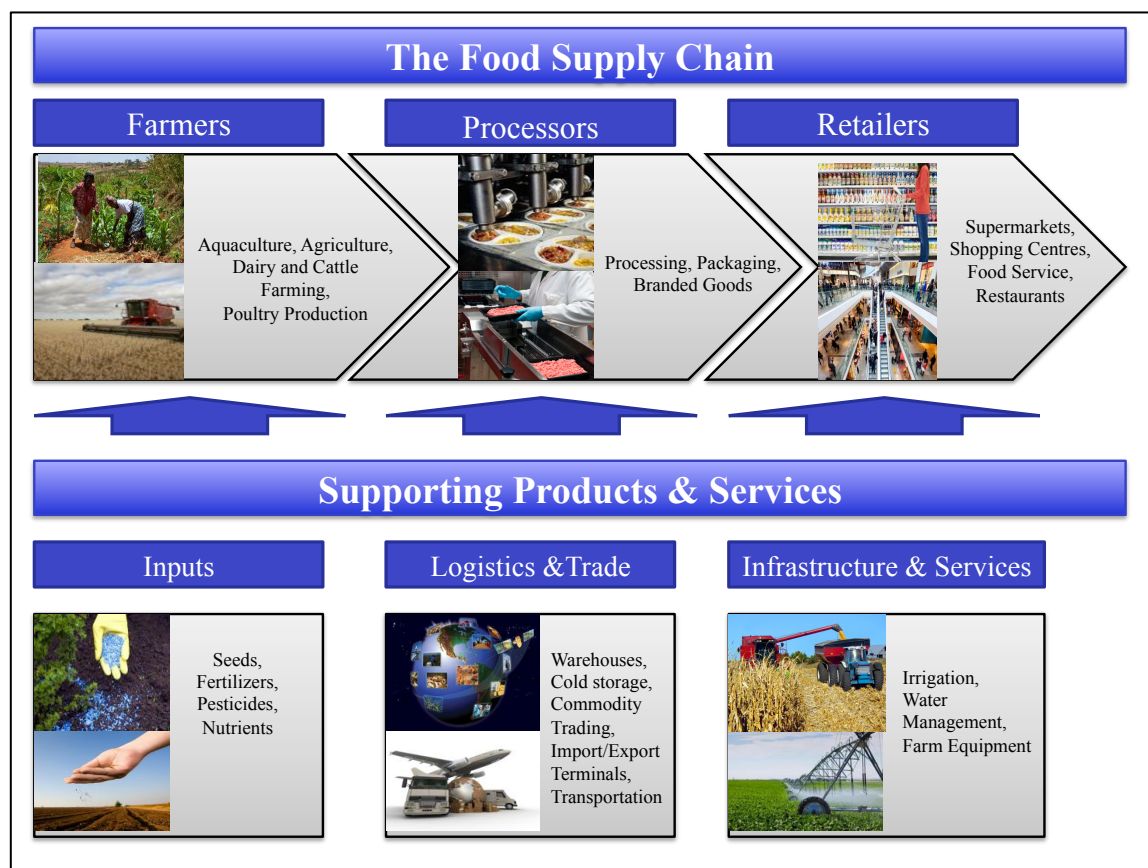
In the current global corporate “food regime”, the supply chain is the metabolism of global food trade, through which food is circulated by trade across the globe. This is the arena in which very influential decisions are made because corporations have increasingly turned to global sources for their supplies (ibid: 2). These long food supply chains make use of comparative and competitive advantages (mainly labour costs and natural resource availability) to ship food across the globe so that it reaches the consumers in developed countries and is of edible quality. The refinement and the greater efficiencies of the food supply chains is one of the most distinctive features of the corporate “food regime”.

However, within supply chains, the entities in play differ starkly in terms of their economic power. The weakest but environmentally most influential entity is the farm level. Farmers produce food and fibre consuming 90 per cent of global “green” and “blue” water resources in the process (Allan 2013).

It is a feature of the corporate “food regime” that bigger units of production enjoy economies of scale in farming and they have markedly decreased the costs at the farm level. As a result of decreasing revenues in agriculture, small, farmer owned units have increasingly been driven out of business (McMichael 2009). Within the supply chain, food is traded by other entities such as wholesalers, processors, distributors and retailers. The financial returns can be only high if economies of scale are utilised to keep production costs low. Figure 6.2. explains the relationships between the different elements in the food supply chain. Starting at the farm level, where the actors are very numerous, the food supply chain also includes processors and retailers as well as supporting industries such as farming inputs, logistics, trade, infrastructure and farming

services. These agents are organised in numerous supply chains, which have become increasingly efficient. Unfortunately one of the core inputs - the natural resource water - is not captured by the reporting and accounting systems of these supply chains. In the Middle East, the local food supply chains are very vulnerable to the unreliability and periodic absence of water resources. The Middle East is as a consequence one of the most food import dependent regions in the world.

As shown in the background chapter, the lowest level of the food supply chain, the farm level, is subject to physical water scarcity in Qatar and Jordan. Water is the limiting factor for local food supply chains in both countries. Without more effective activity at the farm level as well as by other agents in the food supply chain more farmers cannot produce more food. Food has to be sourced internationally in supply chains, which are subordinate to the Western dominated global food system. The next section will analyse the power of the actors in the global supply chain from which Jordan and Qatar have been importing between 80 and 90% of their strategic food commodities.



**Figure 6.2. The Food Supply Chain (adapted from Robeco 2013)**

### 6.2.2. The actors in the global “food regime”

This section will analyse the actors in the global supply chain relevant to Jordan and Qatar on which these two economies have to rely for their food security. It is argued that the market power of these powerful external food chain actors impacts the theoretical range of choice of both Jordan and Qatar. The full force of the current third corporate “food regime” will be revealed. As outlined in the theoretical framework chapter, the second “food regime” was used by Western states to establish and extend their geopolitical sphere of influence.

The third “food regime” has seen a decisive shift from public to private governance (McMichael 2009). This concentration of private sector market power in the food

supply chain will be the topic of concern in this section. As Figure 6.2 shows, the food supply chain is a finely coordinated construct that delivers food to the twenty-first century consumer. The actors in the supply chain consist of both well-known brands and less well-known non-brands (Allan 2013). The former are almost exclusively traders of staple grains and beef. The brands trade, process, and retail high value global food commodities. While Figure 6.3. provides an example of how the global supermarket chain “Carrefour” has permeated the Middle East, Figure 6.4. shows that the concentration of brands is in the hands of a few multinational companies. The vast majority of the brands are sold across the Middle East. The best-known actors to the public are those who depend on consumer trust. For example, supermarkets such as Walmart and brands such as Nescafé, Unilever, Kraft, and Coca Cola are major players in the private sector governance of food. However, there are also some less known private actors that are strategically important, which will be discussed in the next sections.



Figure 6.3. Carrefour expansion in the Middle East by region (Carrefour 2011)



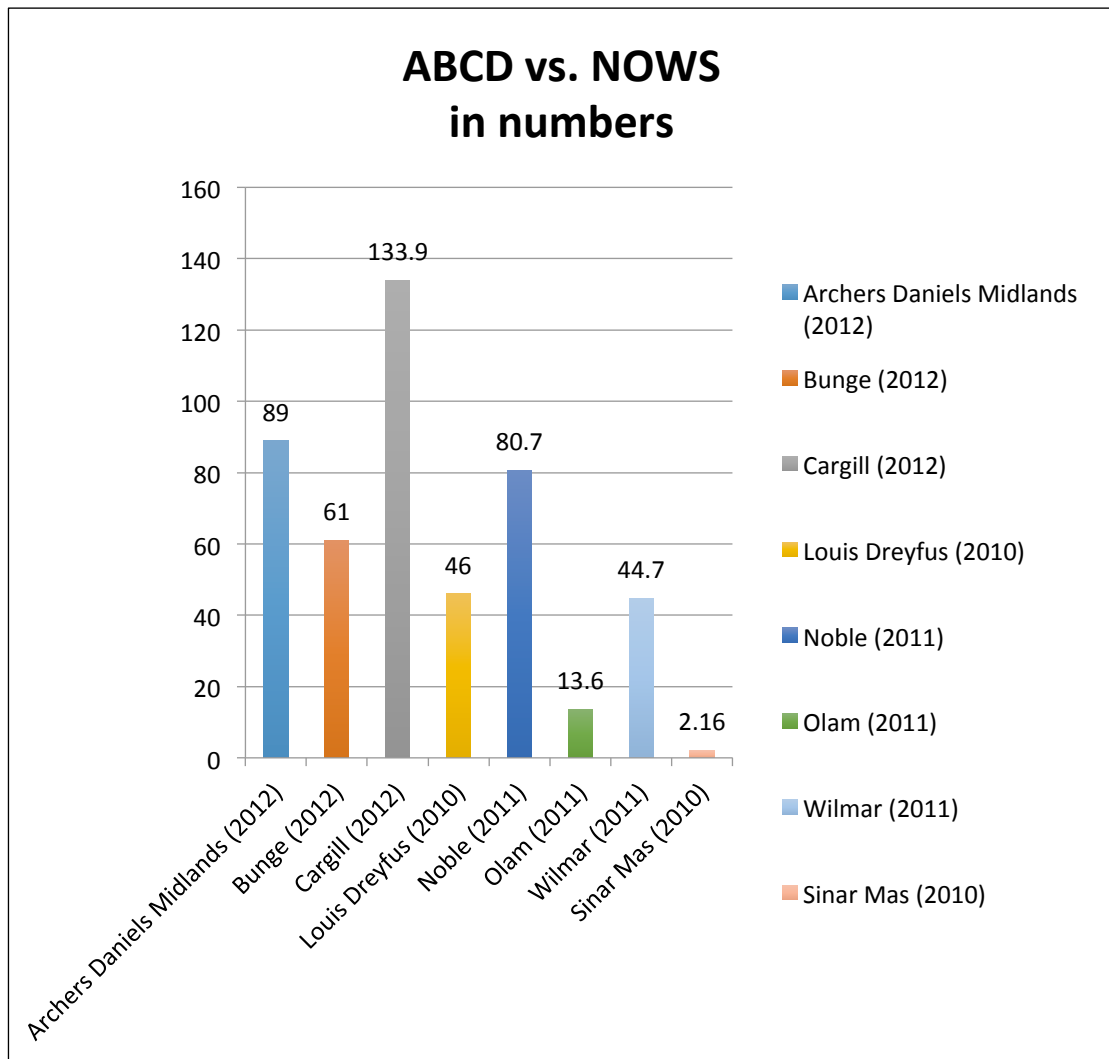
Figure 6.4. Top ten food producing companies (Oxfam 2013)

The brands and supermarkets can engage with farmers directly and these contractual relationships are very significant. Strategic bulk commodities such as wheat, rice, meat and sugar are mainly processed and sold by major and long established international traders. They sell a significant proportion of the staple foodstuffs to the brands, such as Unilever, Nestlé, Kraft and Pepsico. It is therefore important to shed light on these actors that operate in a very low profile mode in the food supply chain that purchase and trade wheat, rice, fodder and sugar. In a recent Oxfam study, four of the strategically most important actors in the food supply chain examined the ABCD grain and beef traders: Archers Daniels Midland (USA), Bunge (USA), Cargill (USA) and Richard Dreyfus (France). The companies act as *“input suppliers, landowners, cattle and poultry producers, food processors, financiers, transportation providers, and grain elevator operators, and they provide much of the physical infrastructure involved in agri-food production and marketing”* (Murphy et al. 2012).

It is argued in this study that this is one of the most powerful networks of power in the global “food regime”. The ABCD corporations are active along the length of a number of strategic food supply chains such as wheat, maize and sugar (Murphy et al. 2012). This global node of market power over key food commodities determines the options available through the range of choice to food security policy-makers in Jordan and Qatar. The present third “food regime” that emerged in 1980s has gradually evolved through strategic political decisions made by Western governments. It continues to dominate Middle Eastern food supply chains. It is the most important policy choice, in the range of choices available to Jordanian and Qatari policy-makers responsible for delivering food and water insecurity for the Jordanian and Qatari economies.



These companies benefit from the limited amount of bulk commodities that are traded across countries. For example, only 18 per cent of world wheat production and 10 per cent of maize is traded globally (Murphy et al. 2012: 7). For other commodities such as soy (34 per cent) and palm oil (75 per cent) there are higher volumes crossing borders. The trade of such commodities is largely in the hands of the ABCD companies, which leads to the unique power of these corporations in the global food supply chain. As shown in Figure 6.5, their size is even more impressive. Cargill is the largest privately held company in the USA with sales and revenues of \$133.9bn in 2012. Archers Daniels Midlands comes next with \$89bn. Bunge and Louis Dreyfus are third and fourth with \$61bn and \$46bn of net sales respectively (ibid: 8). However, Western companies do not trade food exclusively as other world regions have adapted their economic policies to Western role models. As a result, power within the global “food regime” has become increasingly contested.



**Figure 6.5. The economic power of the ABCD and NOWS in numbers in billion US\$ (own illustration/source company websites)**

### 6.2.3. Asian counterparts

At the same time, and to add further pressure to the dynamics of the global political economy of food, there are trading companies in other world regions that have been established and have grown in size over the past two decades. Russia, for example, has established a state-owned company named United Grain Company (UCG). However, this company is at present largely trying to control domestic trade and with neighbouring former Soviet Union countries. The surplus wheat is traded with countries

the Russian government seeks to establish good political relations with, for example Syria and Egypt. It is important to stress UCG does only trade wheat produced in the Commonwealth of Independent States but doesn't invest outside the borders of the former Soviet Union countries (Pall et al. 2011). Thus, the business model of the Russian government hardly resembles the ABCD model. However, East Asia seeks to replicate the ABCD model of agricultural trade.

Four Asian traders, Noble Group (Hong Kong, China), Olam and Wilmar (both from Singapore) and Sinar Mas (Indonesia) have been identified by Oxfam as growing rapidly in global food trade (Murphy et al. 2012; Figure 6.6.). Their net sales range from \$80.9bn (Noble Group), \$44.71bn (Wilmar), \$13.6bn (Olam International) to \$2.16 (Sinar Mas). They have substantially smaller market power. Asian traders can be named the NOWS to draw attention their emerging role in the global agricultural market system. Olam, for example, is already the seventh largest cereal trader in the world, fostered by capital from East Asian markets. Olam seeks to become one of the leading global traders with a special focus on East Asia, Latin America and Africa. The company has already been able to become the largest nut supplier in the world (Key-Informant #33). In the past couple of years, the company has continued to pursue an aggressive expansion strategy through the purchase of Spanish coffee businesses and Egyptian food processing companies to increase its stakes all along a number of food supply chains (*Wall Street Journal* 23 Dec 2012). Thus, the “food regime” that presses on the theoretical range of choice in Middle Eastern economies may be affected by another form of restructuring and reshaping by the rising Asian traders. However, the traders also rely on other input suppliers in the food supply chains that will be discussed in the next section.



**Figure 6.6. The global nodes of power: ABCD vs. NOWS (author's own illustration)**

#### **6.2.4. Input suppliers**

Other input suppliers such as seed and fertiliser producers and farming equipment producers also influence farm technologies and innovation. In this section, the power of seed and fertiliser producers will be analysed. During the second “food regime” from the 1940s to the end of the 1970s, the “green revolution” in Asia and Latin America led to a tripling or even quadrupling of crop yields engineered by American and other international seed breeders and fertiliser manufacturers (Hickens 2009). The companies that provided the necessary technological input to trigger these higher yields have impacted productivity. At the same time they have brought adverse effects on the environment. Multinationals such as Dow Chemicals, Monsanto, Syngenta, Bayer Crop Science, and DuPont are some of the major players in this area.

Higher yields have resulted from the installation of capital-intensive technologies. These technologies have been adopted by “big farming” across the world. As a consequence, many smallholders across Latin America and Asia had to give up their businesses due to the new conditions associated with the global scale of the systems and concentration of asymmetric market power (Shiva 2000).

The often-criticised social aspect of the “green revolution” conceived during the second US government-led second “food regime” in the 1960s and 1970s marked a decisive shift in the global political economy of agriculture (ibid). As a result, smaller actors became “vertically or horizontally integrated” into the global food supply chain often under the roof of a large trader or food processing company. “Vertical integration” is a management style that brings many actors in to food commodity supply chains. “Horizontal integration” takes place when a firm gains control over other firms that perform similar activities at the same level in the production and marketing sequence (Rehber 1998: 2). As a consequence of these micro-economic processes, the actors in the global “food regime” have grown bigger and bigger. These shifts are important because the agricultural production and food and fibre commodity trade differs substantially from other economic sectors. The powerful roles played by the United States and its Farm Bill and by the European Common Agricultural Policy (CAP) are unique in shaping the global food system. One has been the outcome of the consequence has been the fostering of companies that may have become “too big to fail”.

#### **6.2.5. The role of subsidies**

Global agriculture does not function like other markets. Over the course of the twentieth century, agriculture became a prime example of economic nationalism. The reason for

the absence of free market principles is the role of the national interest of states. An important feature of the resulting economic nationalism is the role of state subsidies in agricultural “markets”. These subsidies are at the heart of the global “food regime” that have been fostered by governments with taxpayers’ money and protected by tariffs. Protectionism is one of the most striking features in the global political economy of food. Since food security is highly strategic, American and European decision-makers developed protectionist policies to enable their agricultural sectors to prosper. In the intermediate years between the first and the second “food regimes”, the United States administration under President Franklin Delano Roosevelt introduced the first “Agricultural Adjustment Act” that was also termed the “farm bill” in the course of the New Deal (Dimitri et al. 2005). What was originally designed as a mix of commodity-specific price and income support programmes paved the way for the second “food regime” that emerged in the 1940s, characterised in some regions by the dramatic transformation of the agricultural sector from smallholder production to large-scale farms.

The implications for employment of the shift from the first - 1860-1930 - to the second “food regime” for employment were immense. During the first “food regime” from 1860 to 1930 approximately 41 per cent of the American workforce was employed in agriculture (ibid). The corporate “food regime” in 2000/02 only relied on 1.9 per cent of the labour force. The dependence of the US Gross Domestic Product (GDP) on agriculture also declined from 7.7 per cent as a share of total GDP in 1900 to only 0.7 per cent in 2002. Technological innovations, mechanised farming, changing market conditions and the trend towards “supersizing” farms enabled the agricultural sector to

deliver higher outputs while lowering the size of the labour force and thus also labour costs (ibid: 3-4).

This transformation of the US agricultural sector and its low cost regime led to a centralisation of the producers and traders. One could argue this shift towards “supersizing” of agricultural production units in the US enabled the ABC of cereal traders to reach their powerful market position as identified by the Oxfam (2012) report. The original intention of the “farm bill” to support small family farms during the Great Depression and after the war has been perverted over the decades.

The subsidies paid by the US government to its large-scale farmers are still high, totalling \$288 billion in the latest five-year period from 2008 to 2012 (World Bank 2009). To what extent the agricultural subsidies beef up the balance sheets of the agribusiness sector cannot be answered in this study. The role of direct agricultural subsidies within the corporate “food regime” remains opaque but it clearly they indirectly benefit the ABCD corporations operating the global food system. The ABCD corporations have proved to very adapt in operating in something that is presented as a market but which in practice is a highly subsidised suite of arrangements that very successfully obscure the link between input costs and the price of food and fibre commodities. However, the costs of natural resource inputs - water and energy – are not captured.

The European Union is the other example of an institution that pays out direct subsidies to its farmers. Although the CAP was conceived more than 20 years after the American “farm bill” by the Treaty of Rome in 1957, Europe’s farmers and thus the Dreyfus

conglomerate have also benefitted from protectionist measures to support farmers.

Although the European agricultural sector never grew at the same pace as its American counterpart, it followed the economic nationalism trend conceived during the second “food regime” in the US. The second global “food regime” existed during the period when the capitalist Western world sought to contain the communist threat in the east. The global “food regime” proved to be a powerful means of confronting the communist bloc. The communist bloc had no equivalent strategic leverage.

As a result of capital accumulation fostered by subsidies, the share of the global grain traders and actors within the food supply chain have accumulated to approximately 90 per cent of all traded cereal commodities globally (Murphy et al. 2012: 3). This “Corporate Welfare” (Bovard 1995) has enabled private companies to become strategic multinationals.

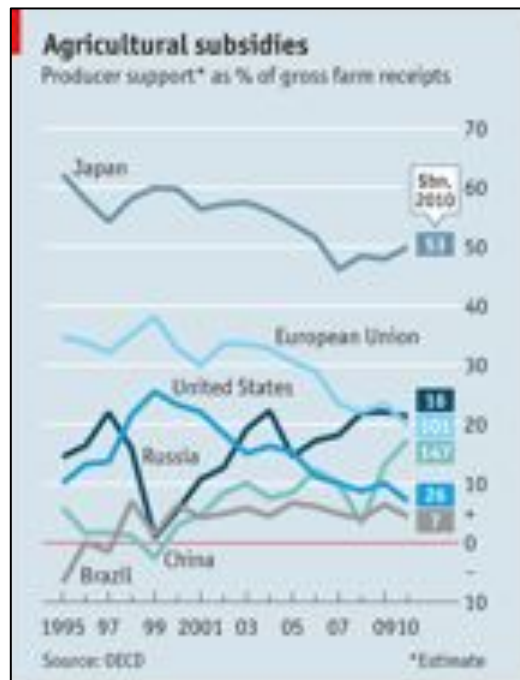
Only since the 1990s, have companies become somewhat more accountable. Archer Daniels Midland (ADM) and Bunge are gradually being transformed into public companies. But Cargill and Richard Dreyfus are still operated in family mode (Murphy et al. 2012). As a result, no foreign investor can purchase shares in the latter two companies and influence their corporate policy. At the same time, the US government through the Farm Bill and the European Union through the CAP are annually injecting 20 billion USD and 60 billion EUR respectively to maintain food security (or supremacy) in the Western world (Peterson 2009; Keulertz and Sojamo 2013).

The operational comparative advantage of the ABCD corporations - in market knowledge, in financial power, banking and hedging - enabled the traders to not only



control Western markets but it also provided the capital stock to “vertically and horizontally integrate” the agricultural sectors in Latin America and parts of Asia. This process led to a rising share of OECD countries in the volume of cereal exports between 1970 to 1996 from 73 to 82 per cent. In the global South cereal imports accounted for 60 per cent of the world’s traded cereal volumes (Peterson 2009; Murphy et al. 2012; The Economist 2011).

In Asia, similar policies akin to the West’s have been pursued since the 1990s. China, for example, has scaled up its agricultural subsidies to levels close to those of the European Union and the United States (The Economist 2011). Japan however is the major player in the global political economy of food with annual direct support to farmers worth \$53bn (See Figure 6.7.). It must be stressed that despite companies such as Olam and Wilmar having their headquarters in Singapore, the vertical as well as horizontal integration of the supply chain makes their office location meaningless because they can access direct agricultural subsidies in the countries of their business expansions. Yet, the full force of the economic power of the corporate “food regime” only becomes visible when the control of Western and Eastern agribusiness over global water resources is grasped.



**Figure 6.7. Agricultural Subsidies (The Economist 2011)**

### 6.3. Controlling global water resources

The agribusiness giants invest all along the food supply chain in regions with rich water endowments. For example, since the 1980s, the ABCD have expanded their business operations across the globe in regions such as Latin America, Australia and Canada where different quantities of water are readily available and for agricultural use. The newcomers such as the NOWS are trying to catch up through investments in regions such as East Asia, Latin America and parts of Africa where economies possess a comparative advantage in water resources and other factors.

Only when viewed through a water lens, can the power of corporate “food regime” be fully grasped. The merchants of grain not only control global food trade and food supply chains. They also have access to the most precious resource in agriculture - water. Neoliberal policies to open up markets have allowed the traders to invest in

water-rich regions such as the “water tower” of the world, Latin America, where 28% of the world’s water resources are located but where only 6% of the global population live (GWP 2013).

Foreign policy tools such as the “Washington Consensus” that liberalised debt-torn economies in Latin America in the 1990s enabled the ABCD to invest heavily in such strategic regions of agricultural production. Moreover, Cargill for instance re-invests any revenues it has made in foreign countries into the further expansion of its activities in the country (Kneen 2002: 123). As a consequence, Cargill has become the leading agribusiness exporter in Argentina, which is a key exporting economy of soybeans and wheat (Cargill Website 2013; Biro 2012: 95). Together with the US and Canada, Argentina accounts for 59-68% of global export of the three above-mentioned crops (Biro 2012: 58). However, Bunge, ADM and Dreyfous also operate in Argentina to obtain a significant share of the pie.

The outcome of the expansion of the global “food regime” traders has been that they have acquired land endowed with water resources of which, the most strategic factor is the resource itself, water. Figure 6.8 below illustrates global “virtual water flows” that show how crucial North and South America are as virtual water “providers”. These are the nodes of power in the global political economy of water for food production that the corporate “food regime” has acquired. Although no publicly accessible material exists on the exact investments, the ABCD’s control of virtual water “resources” has been analysed by Sojamo (2010). She concluded that 60% of global virtual water is “traded” on a daily basis by the ABCD.

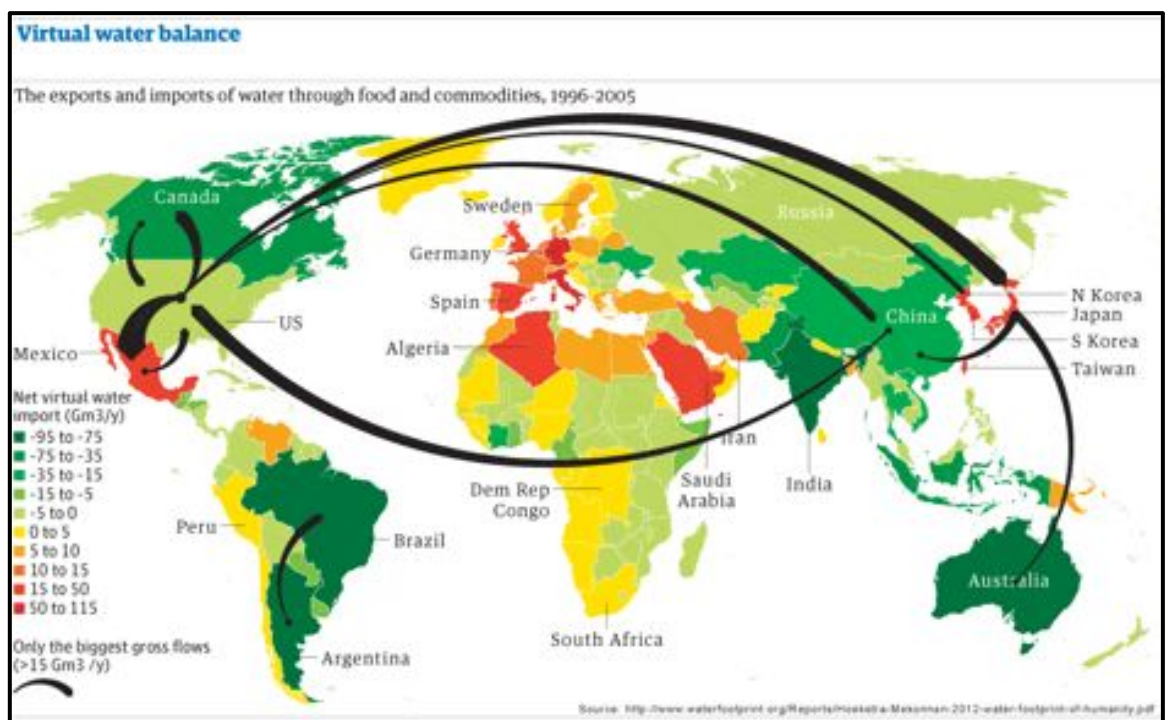
For a water-scarce region such as the Middle East, the natural endowments included in the ABCD's business operations lead to a political outcome, which has been termed "virtual water hegemony" (Sojamo et al. 2012). In this global "food regime", the agricultural sectors of Jordan and Qatar appear to be very vulnerable to power of the corporate "food regime". Although Western Europe's position in Figure 6.8. comes across as similarly weak, it must be noted that the EU enjoys preferable trade relations with the water-rich economies in the world.

Europe is a vibrant part of the corporate "food regime" because companies like Dreyfus and Unilever have used their capital to invest in the agricultural sectors of the "water towers". The bulk of EU virtual water "imports" stem from soy imports, which play a vital role in meeting the demand for meat in the European Union (Water Footprint Network 2013).

Finally, the EU's eastern expansion allows it to access economies with water such as Romania at a time of ageing and thus gradually decreasing populations in the EU. A significant vulnerability of the EU arises from the high demand for food at the same time as EU consumer waste food. European consumers throw away 30-50 % of the food purchased and are tending to adopt diets that are unhealthy and water intensive (IMECHE 2012). The EU could adopt the alternative of cutting waste in the food supply chain.

In the Middle East, the limiting factor for the production of more food to meet population growth is water. Another important reason for the vulnerability of the Middle East as a region is the absence of power over key strategic operational nodes in

the global “food regime”. There are no national or regional trading houses akin to the ABCD or NOWS in the Middle East and North Africa. Not even in the Gulf. This condition makes the region strategically vulnerable. The consequences of these circumstances on the theoretical range of choice with respect to achieving affordable food security in Qatar and Jordan will be analysed in the next section.



**Figure 6.8. Global virtual water flows (Water Footprint Network and the Guardian 2012)**

#### **6.4. The private agribusiness sector in Qatar and Jordan**

It has been shown in Chapter 3 that the private agribusiness sector in the economies of Jordan and Qatar is a fairly recent phenomenon. While Qatar’s agricultural sector is negligible, the Jordanian agribusiness sector is a small sector that has existed since the 1970s. The two economies have to rely on foreign traders from within - and especially from outside - the Arab world. As in most parts of the capitalist world, the Middle

Eastern agricultural sector is in the private sector. However, agricultural prices in Jordan and Qatar are highly regulated and thus determined by their governments (World Bank 2012).

Traditionally, Jordan's agricultural sector is smallholder-based with a few exceptions. Qatar depends on companies outside the peninsula. The two economies have to rely on traders based in neighbouring countries, which are considerably smaller than the Western and Eastern giants. As a report by Alpen Capital (2011) notes: "The food sector in the GCC is highly consolidated with the three leading companies Almarai, Savola and Kuwait Food Company (Americana) contributing over three-quarters of the total revenue of listed companies".

In the Gulf economies, these three private agribusiness companies act as traders through a monopolistic economic position. Yet they act mainly as importing companies not producing companies (Alpen Capital 2011: 3). All three are quite small companies in comparison to the ABCD or NOWS. More importantly, while Almarai and Savola are both based in Saudi Arabia, the Kuwait Food Company is, as indicated by its name, based in Kuwait. However, these Middle Eastern "nodes of power" are small compared with the global players. Regionally, the largest trading group is Savola (Saudi Arabia) with \$5.8bn of revenue in the fiscal year 2010. Americana is second with \$2.4bn and the third-largest agribusiness is Almarai with \$1.9bn (Alpen Capital 2011). All three companies trade, process and deliver food to the Middle Eastern (West Asia) region. In Jordan and Qatar, "nodes of power" do not exist. The small number of the large Jordanian and Qatari companies, as described in Chapter 2, are commercial dwarfs compared to the ABCD or the NOWS or even Savola, Almarai and Americana. The

small scale and market share of the regional agricultural “nodes of power” has become a strategic concern (Key-Informant #1, 2, 6 and 9).

Hassad in Qatar is a complete newcomer to agribusiness. In Jordan the agricultural sector and its trading infrastructures are in a transitional stage from smallholder agriculture to a sector with larger agribusiness companies as described in Chapter 3. Conditions in the smallholder part of the agricultural sector have led to concerns on the part of decision-makers. For example, the previous chairman of Jordan’s Exporting Producing Association for fruits and vegetables (JEPA), Basel Deek, stressed that “our departure point has to be the market in order to change the sector into an industry that caters to markets” (*Jordan Business Magazine* 2007).

At present, the smallholder agricultural sector in Jordan still has the character of a low-skilled sector where farmers are perceived to not “understand” (neoliberal) market principles such as demand and supply. This condition has led to the “inefficient” production and marketing of products such as tomatoes and aubergines that may not find sufficient demand from the local and global markets (ibid). This opinion was echoed by the members of the business community in Amman who were interviewed (Key-Informants #17 and 19). They described the agricultural sector as “politically, [and] not commercially managed”. In a nutshell, for the business elites and policy-makers, failure to implement scalar production is a root cause of the dismal productivity of the agricultural sector in the Hashemite Kingdom (Key-informant #19). What do these perceptions of the business representatives tell us about the influence of the “food regime” on the theoretical range of choice of the two economies?

The answer can be found in the global regime to which the agricultural sectors of the two economies have to adhere. Here Friedmann and McMichael contribute to the explanation by providing a perspective to judge the size of the agribusiness actors in Jordan and Qatar. The distinct difference between the agricultural sectors in Jordan and Qatar is driven by water availability; however, it also reveals more about their position in the global “food regime” whose organising principle is shifting from “state to capital” (Friedmann 2005: 244). The Jordanian business elites - the importance of which has been highlighted in earlier chapters - seek nothing less than a strategic replication of the US model of the corporate “food regime” where smallholders have been increasingly marginalised by agribusiness since the inception of the current “food regime” thirty years ago, which unleashed the power of the private sector (Paarlberg 1980, 2010; Shiva 1980).

In the agricultural sectors of the countries analysed neither the marginalisation nor the establishment of large-scale producing agribusiness companies have been established. While in Jordan the structure of the farming sector and the domestic situation have together prevented marginalisation, the dismal conditions for farming in Qatar have prevented the establishment of a US-style agricultural sector from the outset. Viewed through the “food regime” lens, the two countries are economic outsiders on account of environmental and social forces, and are marginalised to the fringes of the global political economy of food.

This situation is neither new nor surprising given the role of water scarcity in these economies. Agricultural expansion has reached a limit; henceforth a corporate restructuring of the current set-up of the agricultural sectors in Jordan and Qatar has



been difficult if not impossible. However, this is only an economic reason why the two economies seek to increase their trade leverage through expanding the range of choice. Food production and trading are highly strategic and political topics. The following sections will illustrate the importance of these political dimensions.

It has been argued that a transformation in agriculture in Jordan and Qatar is viewed as a strategically important issue for decision-makers. The vulnerability of the two countries as a consequence of physical water scarcity in the corporate “food regime” becomes evident if the economic power of the actors in the global food supply chain is compared to that of their Qatari and Jordanian counterparts. This circumstance highlights the significance of the global food trade regime and its subordinate supply chains in determining in the potential expansion of the range of choice of Jordanian and Qatari decision-makers to consider overseas farmland investments to gain access to water embedded in food.

Such expansion is not merely an economic question. As indicated in the section on agricultural subsidies that fostered the Western giants during the second and third “food regimes”, the corporate “food regime” is decisively political. This circumstance is another, more important reason for Jordan and Qatar to expand their theoretical range of choice. The next sections will therefore analyse the political history of the “food regime” to provide an answer to the second question about the rationale of Qatari and Jordanian decision-makers.

### **6.5. The geopolitical impact of the “food regimes”**

As already noted, the power of the global traders in conjunction with supermarkets has established a nexus of power in what is called the global “food regime”. It has been shown that agents across global food supply chains are increasingly centralised in the West and continue to be fostered by state subsidies. They have immense economic power. Similarly, East Asian interests are seeking to deploy strategies akin to the Western world to establish their own actors in the global corporate “food regime”. However, at this stage of the analysis the political dimension of the “food regime” will be highlighted and explained to argue that politics shape investment strategies more than “optimal economic trade policy” (Wichelns 2011).

In order to analyse the role of international politics the study will present the political impacts of the dependence on the global “food regime” of the two economies, Jordan and Qatar. Dependence on foreign food imports is not a new phenomenon in the two economies. It will describe the previous experiences of Qatar and Jordan with regard to dependence on food imports? How have these previous experiences shaped their “collective memories of concern” (Woertz 2013: xi) and how have they influenced the pragmatic maxim of the range of choice in the two analysed countries?

### **6.6. Collective memories of concern**

An often under-valued but central pillar in foreign policy is the use of food in state-to-state relationships (Paarlberg 1982; Bush 1996; Woertz 2013). Food policy-making is highly politicised where the intensity of free market rhetoric of Western governments is reduced to the installation of state subsidies. The vulnerability of the whole of the Middle East - including that of Qatar and Jordan - will be of concern in this section

because the political dimension of the expansion of the range of choice can only be illustrated by taking a broader perspective on past food politics in the Middle East. This vulnerability to the global “food regimes” became evident in the post-war development-led second “food regime”. The United States openly used and intertwined food as a tool in both trade and foreign policy. In the wake of the surplus production-period of the second “food regime”, President Eisenhower signed Public Law 480 which sought to “lay the basis for a permanent expansion of our exports of agricultural products with lasting benefits to ourselves and peoples of other lands” (USAID 2013). Later re-named by President Kennedy as “Food for Peace”, Public Law 480 promoted the sale of surplus food to the rest of the world to capitalise on the comparative advantage of the US. However, the Department of State, the Department of Agriculture and the White House also increasingly used the surplus production generated through new farming technologies as a means of “carrot and stick” in foreign policy. When Gamal Abdel Nasser flirted extensively with the Soviet Union during the 1960s, the United States granted Egypt a PL 480 contract to purchase much required wheat to align Nasser within the Western camp despite the fact that the revenues were of no use to the United States as the Egyptian Pound was not traded at that time (Woertz 2013: 163).

The covertly aggressive use of food occurred during the second “food regime” during the time of Henry Kissinger at the Department of State. Kissinger famously directed the National Security Study Memorandum 200: Implications of Worldwide Population Growth for U.S. Security and Overseas Interests (NSSM200), to analyse the impacts of population growth on US national security because it claimed that civil unrest in less developed countries could increase under certain scenarios. An analysis of the food question was a central pillar in the study to understand how global food supplies could

threaten future economic development and what measures were required to increase agricultural production across the world (USAID 2013).

Initially classified, and later declassified, documents of the time revealed that Kissinger viewed food as a formidable foreign policy tool. During White House meetings with President Ford, he stressed “I don’t give a damn about Bangladesh on humanitarian grounds. I want it for foreign policy” (White House Memorandum of Conversation 1974) when discussing emergency food aid deliveries to hunger-torn countries during the 70s food price spikes. He further accused the then Secretary of Agriculture, Earl Butz, in phone conversations of having no “foreign policy experience”, when Butz wanted to deliver more wheat to other than food-stressed countries such as Poland in 1975 on humanitarian grounds (Department of State Telco 1974). The “food weapon” paradigm was very evident in the Kissinger era (Woertz 2013).

In the Middle East, the United States threatened to use the “food weapon” during the heydays of the Organization of the Petroleum Exporting Countries (OPEC) oil embargo in 1973 as a response to Western support for Israel during the Yom Kippur war (Luttrell 1981: 13; Woertz 2013: 121-130). The prevailing slogan underlining this threat was “we freeze, they starve” together with the idea of establishing a “grain cartel” (Luttrell 1981: 13).

Such slogans were initially not taken seriously in the Middle East because; they were seen as mere foreign policy bluffing (Key-Informant #6). The “food weapon” threat also found a more politically apt target than Middle Eastern economies. In 1975 President

Ford tried to embargo food sales to Poland and the Soviet Union but received firm opposition from farming lobbyists against limiting sales and thus potential revenues. It took, however, only until January 1980 for the United States to translate food embargo threats into practice when the Carter administration decided to enact a wheat embargo on the Soviet Union by not selling 17 million tonnes after the dismal harvests consequent on the 1980 drought in the Soviet Union (Paarlberg 1980). Carter's foreign policy decision to place an embargo on the Soviets sought to penalise the Soviets for their invasion of Afghanistan. However, the Soviets acquired wheat from other world regions such as Europe and Latin America, and hence the effect was negligible. As a result of this embargo, grain prices plunged in the early 1980s and America's farms were hit by a severe crisis. The embargo was removed in April 1981 soon after Ronald Reagan assumed the Presidency in January 1981 (ibid). The United States learned its lesson about using an inept "food weapon" as a foreign policy tool. During the Reagan era and as a result of the Carter imposed farm crisis, America's farming sector experienced a severe crisis during the 1980s that led to further vertical integration. Smallholder agriculture increasingly vanished paving the way for the deepening of corporate "food regime" in the United States. The United States returned to a strong export-oriented use of PL 480 in the 1980s without its further application in foreign policy.

In the Middle East, however, the actual use of the wheat embargo was perceived with severe anxiety. As one key informant stressed, "Food insecurity has the potential to topple regimes" (Key-Informant #6). For a long time, self-sufficiency was seen as indispensable (Woertz 2013). Although not echoed with similar frankness, Qatari and

Jordanian decision-makers also referred to the 1970s to stress the experience of the past having an impact on current perceptions.

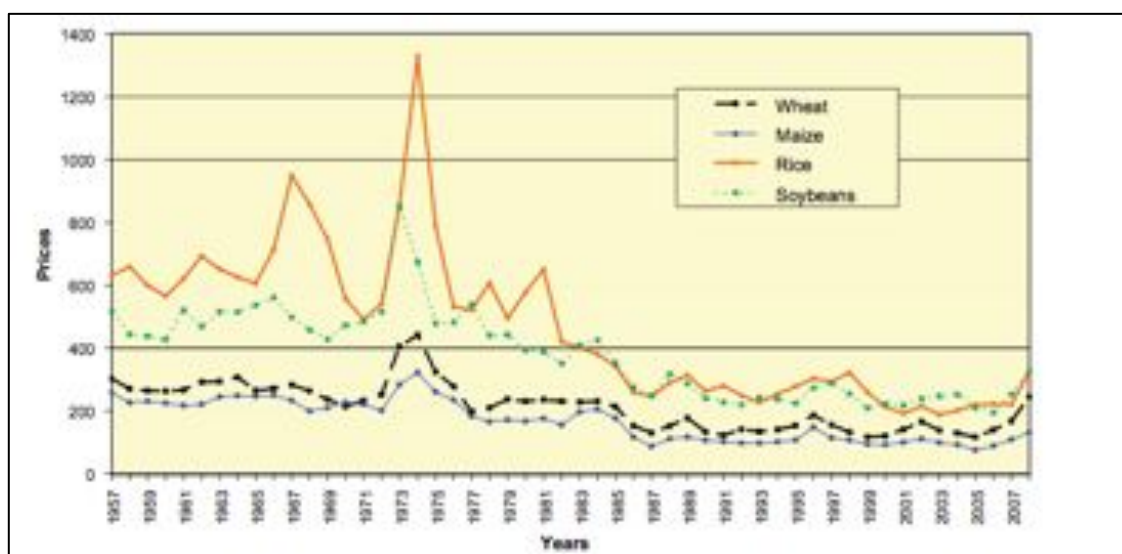
Decision-makers in both countries stressed that food dependency could be a dangerous strategy. It was highlighted that dependence on food trade from the North American “food bowls” together with US food trade embargo threats left Arab leaders highly nervous in the early 1970s (Key-Informant #1, 6, 10, 12; Woertz 2013: 172). The lack of available water resources for political and economic independence meant that the MENA economies had no remedy to the “food weapon”, and hence Arab decision-makers developed a strategy to counter the perceived looming threat by the United States during the second “food regime”. As illustrated in Chapter 3, the first strategic plan to expand the range of choice to virtual water “imports” via land investments in Sudan in the 1970s did not succeed. However, apart from the difficulties associated with investing in Sudan, the restructuring from the second to the third “food regimes” led to a perceived de-politicisation of the “food regime” and thus a remedy to the “food weapon”, which will be analysed in the next section.

### **6.7. The Reagan years of agricultural liberalisation**

As illustrated in Chapter 3, the expansion of the range of choice as a response to the use of the “food weapon” by the Americans failed. However, in the period after 1980, the corporate “food regime” came into being following the new US policy under Reagan. The “Reagan Doctrine” in agriculture (Woertz 2013) depoliticised agriculture through liberalisation policies and an emphasis on trade. Instead of politicians influencing agricultural trade, this task was given to the global market in food supply chains, with its asymmetries of information and power, where the ABCD food traders prevailed.

This neoliberal policy shift marked the beginning of the inception of the third “food regime”. Food production became an integral part of global private sector food supply chains without as much interference from the government in the global reach of these activities. It was, however, the experiences of the 1970s that shaped the collective perceptions of the decision-makers.

As a result of these global shifts, the Arab Authority for Agricultural Investment and Development (AAID) - based in Khartoum and Dubai - for example, never fully used the financial capital provided by its member states in 1975. Food prices decreased in the 1980s - see Figure 6.9. - and thus the board did not see the need to further expand its activities in Sudan (Key-Informant #7).



**Figure 6.9. Constant prices for bulk commodities 1957- 2007 (Piesse and Thirtle 2009).**

In the 1990s and early 2000s, the corporate “food regime” showed its power in Iraq before and after the Second Gulf War. Saddam Hussein was supposed to be brought to

his knees through the “Food for Oil” programme, which imposed sanctions on the Iraqi economy where oil was sold in exchange for food aid to a war-torn economy. The sanctions failed for numerous reasons including the role of corruption and informal food trade into Iraq via Syria and Jordan (Woertz 2013: 1). In theory, Iraq could be a “food bowl” due to its geographical location in the Euphrates and Tigris basin. However, the corporate “food regime” interfered in the development of Iraq as a regional food supplier.

An example of the third “food regime” interfering in regional agricultural policy was the role of former Cargill executive Dan Amstutz. The Bush administration handed over the task of supervising the reconstruction of the Iraqi agricultural sector to Amstutz immediately after the end of the Iraq war. Amstutz was the Under Secretary of Agriculture for International Affairs and Commodity Programs during the Reagan administration from 1983-8. He next became head of the US delegation during the Uruguay Round of General Agreement on Tariffs and Trade talks between 1987 to 1989 (Kneen 2002: 33-34).

Amstutz, a proponent of fierce neoliberal policies, advised the US Administrator Paul Bremner on agricultural policies that largely benefitted traders, seed and fertilizer companies from the US, by ensuring legal protection of the intellectual property rights of seed and input providers like Cargill. Such issues alongside the removal of agricultural subsidies for smallholder farmers were Amstutz’s legacy in Iraq, which received far more attention compared to more pressing issues of agricultural development like extension services and credit facilitation (Woertz 2013; Clair 2003). Amstutz followed the policy paradigm of introducing “market-based reforms” in Iraq,



which the American and British advisors had in mind for the Iraqi economy (Stuart 2006).

After Amstutz left Iraq at the end of 2003, the United States tried to entice agricultural investors from the GCC economies to inject capital into the Iraqi agricultural sector. However, the business community had too many objections to the Bush administration and whether his foreign policy in the region could be trusted. Hence, the use of an agricultural “riyalpolitik” failed due to the lack of trust in the US dominated global agricultural political economy of the time.

The GCC business community also questioned the futility of the Iraqi agricultural sector due to the lack of governance capacity (Key-Informant #6). The resulting legacy of the Western policy paradigm in the aftermath of the Iraq war has been the prevention of Iraq becoming a mini-regional “food bowl” due to the mismatch of neoliberal economic development paradigms and the political-economic situation in this Euphrates and Tigris riparian state. The geographically closest option for Jordan and Qatar to expand the range of choice has therefore been effectively impeded. As shown in Section 6.2., the beneficiaries of the “Reagan Agricultural Doctrine”, the ABCD, are the main traders in Middle Eastern markets, hence the corporate “food regime” benefits from the absence of the Euphrates and Tigris as a regional “food bowl”.

The “Reagan Doctrine in Agriculture” is still applied by the current Obama administration (Personal Communication with Eckart Woertz 2013). The commercial interests of the “food regime” prevail. For example, despite severe sanctions on Iran, the ABCD are still permitted to sell wheat to the Islamic Republic (Woertz 2013c). The

third “food regime” with its strong focus on market liberalisation and concentration has resulted in new power relations. This shift from state control to market liberalisation has brought about a transition of power from the Kissinger-akin “realpolitik” to a highly sophisticated use of commercial corporate interests that had converged with US national interests.

The connections between the corporate sector and US policy-makers became evident through a number of cases. For example, William R Pearce, chairman of Cargill until 1993, was described as one of the most influential public policy advisors to various administrations in Washington D.C. after the advent of the corporate “food regime”. Like Amstutz, he had privileged access to US foreign policy makers, trade negotiators and presidents to lobby for trade liberalisation through the North American Free Trade Agreement (NAFTA) and the World Trade Organisation (WTO) (Kneen 2002: 32; Minnesota Star Tribune 29/06/1993). A very important insight that helps in understanding the contradictions of US farm policy and was provided by the 2012 Republican presidential run-up candidate, Rick Santorum. He described ADM in the early 1990s as the largest “beneficiary of agricultural corporate welfare” in the United States due to the direct financial support of US politicians such as Bob Dole, Bill Clinton and Newt Gingrich and their political campaigns (Weiner 1996). Lobbying in Western economies is not a new phenomenon nor is it restricted to the agribusiness corporations. However, the main difference between agribusiness lobbying and, for example, pharmaceutical companies must be seen in the protected and subsidised nature of agricultural markets.

As shown above, Western economies subsidise agents in global food supply chains to protect those businesses but also simultaneously lay the foundations for those

companies to expand their activities. Agricultural power is thus in the hands of a few based in the northern hemisphere with access to water resources. The Arab world is one of the main importers of strategic food commodities such as wheat, sugar and animal feed for livestock production from the corporate “food regime”.

The United States understands the opportunities that arise from the need of the Arab world to increase food security. For example, in an unclassified Wiki-leaks cable of 2009, the US Embassy reported back to Washington that food security concerns in Doha should be viewed as an opportunity for US “farmers” to “partner” with Qatar and other capital-rich Middle Eastern economies to promote food security across the region (Wiki Cable 09DOHA595). In other words, the corporate “food regime” could expand its influence across the Middle East by using the Gulf economies as “partners”.

Together with the “nodes of power” in the global “food regime”, the American corporates would use food security again as a geopolitical tool where dependency on food imports could be used to influence political and economic development. This dependency is at the heart of very highly politicised global food system that Middle Eastern decision-makers responsible for food security have to contend.

Dependency on food from outside the region was a headache for decision-makers in the 1970s. All attempts to expand the range of choice in achieving food security in the MENA economies in the 1970s and 1980s failed for two main reasons: first, agricultural investment in Sudan failed politically, institutionally and environmentally due to the inherent challenges of agriculture and the political economy of Sudan; and second, prices for strategic commodities decreased over the course of the 1980s and 1990s as a consequence of a suite of technical and economic factors. Crop yields increased. Subsidies in the US and the EU continued to depress world prices. These prices also did

not fully reflect the energy inputs in agriculture and the costs of water as an input and the costs of mismanaging water were nowhere included.

Meanwhile, globalisation led to an increasing demand from Asia for key agricultural commodities, and hence the spectre of high prices returned in the late 2000s. In the following section, the perceptions of Jordanian and Qatari decision-makers on the 2007/08 and 2010/11 food price spikes will be analysed together with how these perceptions shaped the range of choice. The agricultural limitations of these economies will be identified as well as their history of dependency on Western supply chains. In addition the politically volatile regional environment will be described. All these conditions will be considered in analysing the rationale of Jordan and Qatar to expand the range of choice in achieving food security. How did decision-makers perceive the option of reviving the old “breadbasket strategy” through virtual water “imports” from Sudan? How have increasing food prices roused the spectres of the past that have shaped the collective perception of food security in the Middle East?

This section has reviewed the geopolitical history of the second and third “food regimes” insofar as they have impacted the Middle East. Food and food security in the Middle East are very highly politicised issues, which have shaped the “collective memories of concern” about how vulnerable the region is in a global context (Key-Informant #1, 6, 23, 29, 38, 39). The study has shown that an answer to the first research question is that the economic power of the global “food regime” has brought about the economic dependency of Jordan and Qatar on the Western world. The condition has been an on-going phenomenon since the 1970s. At a time of global political-economic change where Asia is pursuing similar agricultural strategies to those

of the neo-liberal Western economies, the restructuring of the global “food regime” may reveal a dangerous message to Qatar and Jordan.

While Asia has understood the message resulting from the power of the Western-led corporate “food regime”, similar traders are absent in the Middle East. The Middle East may therefore become highly vulnerable in the geopolitics of food with North America and Europe on one side and East Asia on the other. Such geopolitical shifts could even increase the dependency of Jordan and Qatar on economic food trading giants. It is therefore a philosophical pragmatic decision that avoiding economic dependency is within the “useful economic aims” of the two countries, hence investment in the expansion of the range of choice is a “useful” alternative to transform the current subject matter (dependency) into useful terms for Jordan and Qatar. However, Qatar and Jordan have lived with economic dependency on the Western “food regime” for decades. The Pragmatic choice to invest in farmland was further intensified by market price shocks in 2007/08.

#### **6.8. The 2007/08 and 2010/11 food price spikes**

The 2007/08 and 2010/11 food price spikes however were extreme if not unprecedented. Those of the 1970s were similar although they occurred in a world where the population was about half the level of 2008. The food price volatility of the 2007-2011 period not only brought about another round of insecurity regarding food supply, but they also reminded Jordanian and Qatari decision-makers of their economic vulnerability. They decided to develop new strategies by investing in farmland in Sudan in the Sudanese “virtual basin” in Sudan. The developments in the global commodity markets in the 2008-2011 period only intensified the fears of vulnerability in Jordan and

Qatar. In the next section, this analysis will introduce the perceptions of decision-makers in Qatar and Jordan on this defining moment in relation to the rationale of expansion of the range of choice to farmland investments.

The food price spikes of 2007/08 and 2010/11 marked a tipping point in the decision-makers' perceptions of their agricultural commodity security. The vulnerabilities were understood before the spikes. Several interviewees expressed their awareness of the global food system and its supply chains being "very dangerous" (Key-Informant #2) to operate in even before the volatility after 2008. Since domestic agricultural expansion, as illustrated in the background chapter, has been increasingly constrained due to water scarcity, decision-makers have shown an awareness of the increasing role of food secured trade via imports from a country outside the corporate "food regime" with whom Qatar and Jordan are sharing friendly relations: namely Sudan. After the "prime cuts" of global agriculture are taken by the corporate "food regime", Sudan may function as a convenient political and economic alternative to become independent of the politicised and economically powerful "food regime". The next section will analyse the perceptions of decision-makers in the two economies on the global agricultural question to understand the rationale behind investment in Sudan.

## **6.9. Perceptions on the global "food regime" in Qatar**

The perceptions on dependency on the global "food regime" are different in Jordan and Qatar. While Qatari decision-makers perceive food import dependency as having wider economic impacts, Jordanian decision-makers still point at their privileged geopolitical role in the global economy due to the role Jordan has played since 1948 in the MENA region (Key Informants #1,2,9 and 10). As will be shown in Chapter 7, Jordan provided refuge for millions of Palestinians after 1948 and 1967 as well as Iraqi refugees after the

war in 2003. In the past two years, Jordan has also granted political refuge to Syrian refugees. The Hashemite Kingdom's proximity to the United States as a key Arab ally has therefore translated into perceived favourable food aid relations with the United States. This situation shows that Jordanian decision-makers understand the risks and also the opportunities of dependence on the global "food regime". In the following section, the responses decision-makers in both Qatar and Jordan will be provided in more detail.

In Qatar a representative of an investment company stressed that the policy in Qatar for the last decades has been that the Sheikhdome has the financial means to purchase food in the global markets whenever it was needed. However, in 2008 the government encountered the problem that despite abundant purchasing power into their budget through gas revenues food was not available for sale in the global market anymore (Key-Informant #1, 2). In particular, the corporate "food regime" couldn't deliver food to Qatar due to declining harvests in the US. The Government of Qatar response was to establish a company, Hassad Food, to invest in overseas land in order to ensure this situation would not occur again. In an allusion to the main airline of the country, Qatar Airways, the rationale behind the establishment of Hassad Food serves as an economic model to deliver food security. The Government of Qatar has had some very powerful experience in global transportation in the past two decades. By 2012, fifty four million people were in transit annually via Qatar. This traffic gave Qatar new economic leverage. Without the transit operations of the airline Qatar would not have economic power in global aviation. A small airline carrying passengers just to and from Qatar would have generated a costly, non-viable enterprise.

Food trade is viewed as a similar opportunity to the national Qatar Airways experience. Qatari decision-makers wish to achieve economic power in regional and global food trade and become a trade hub for the whole region from Turkey to Egypt. The trade of huge volumes of food via a newly constructed Doha port would decrease the price of food within Qatar according to the strategies proposed (Key-Informant #1 and 2). The US\$7.4 billion port will be opened in early 2016. The port stretches over 26 km<sup>2</sup> and will have an initial annual capacity for 750,000 livestock and 1 million tonnes of bulk grain (New Port Project Website 2013).

Food trade, storage and distribution was a central-pillar in the decision to construct the new port, despite the proximity of Qatar to the largest man-made harbour in the world located in Dubai. The capacity of the new port in Qatar is nowhere near the size and capacity of the 134 km<sup>2</sup> Jebel Ali port that has been established since the 1970s in Dubai (World Port Source 2013). Hence, the regional rival, Dubai may also play a significant role in the minds of decision-makers with the perceived need to access “virtual water imports” through the expansion of the range of choice to farmland investments in Sudan. Doha’s port could provide an alternative to Dubai for regional economic leverage. Chapter 8 will provide further analysis on the wider geopolitical ambitions of the State of Qatar.

Engagement with the ABCD multi-nationals is also part of the strategy aimed at increasing Qatar’s regional and global economic leverage. The government has prepared prospectuses to entice the actors in the global “food regime” to provide them with “penetration” in the regional markets as long as this does not come at Qatar’s expense (Key-Informant #2). Evidence of these ideas is present in the ten-year plan of



Qatar's food strategy is to provide the ABCD trans-nationals with the means to operate from Qatar. It is argued that these corporations would mitigate their risks through Qatar's financial stability, which would underpin the effective operation of the new regional food hub facilities in Qatar. These physical and commercial infrastructures would meet the prime aim of Qatar - the expansion of the range of choice of Qatar - in this case by engaging with the powerful players in the global "food regime" (Key-Informant #1 and 2).

The planned mega-port in Qatar can be interpreted as evidence for the translation of the Qatar's vision of food security into practice. Infrastructure investments play an important role in the Qatari plans to expand the range of choice to farmland investments in Sudan. Another decision-maker stressed the crucial role of Hassad Food, the agricultural investment wing of the Qatari Sovereign Wealth Fund, in investing in overseas agricultural land to lay the basis for these mega-plans to turn Qatar into a food trade hub (Key-Informant #1).

Qatar will be perceived as a minor player in the global "food regime" unless it artificially increases its leverage by gaining a major place regional and global food trade. The expansion of the range of choice by connecting the economy to global food supply chains is thus a means to equip Qatar with the economic means to first and foremost supply its own citizens, either of Qatari or foreign nationality, to keep the economy growing. The role of the power players in the global "food regime" is also well understood in the State of Qatar. Another representative of Qatar's agricultural expansion plans remarked, "We are working with all global traders to achieve this goal". For example, Qatar uses the advice of global consultancies such as McKinsey

and Coffey International to get third party views on the commercial feasibility of the intended projects. Commercial viability plays an additional role in the mind-sets of the decision-makers. Although fear of the global “food regime” and its economic power is certainly feeding into the foreign policy shift towards the expansion of the range of choice, several investors stressed the enormous financial returns of between 15-20 per cent per annum as calculated by international consultancies (Key-Informants #2,4,9 and 20). These consultancies may have gained most of their experience in other areas and the global “food regime” and global food supply chains. They are valuable as advisers because of their deeply established networks in the global political economy of food. These consulting companies draw their expertise from staff, who have previously worked for global food traders (Key-Informant #35). An important reason for using the expertise of companies from the West is the limited experience of Qatari decision-makers with respect to agricultural investment. More importantly, the complexity of agricultural investment as a means to expand the range of choice is well understood, as one interviewee highlighted:

“If we talk about agriculture, we are upsetting everybody. If we talk about real estate or banks, we won’t upset even 1 per cent of the people. If we talk about agriculture, we are even upsetting the poorest man in the country” (Key-Informant #2).

Decision-makers in Qatar perceive foreign policy initiatives to invest in food security in Qatar and the region as an opportunity to expand Qatar’s economic leverage at a time of global change. However, as the quotation above shows, the sensitivity of agricultural investment is well understood by elements of the political class in Qatar. They judge

that Qatari investment into a food insecure country like Sudan may be perceived as controversial due to Qatar's economic prosperity. Despite the awareness of the moral complexity around investment in Sudanese agriculture, Qatar's current plans remain opaque and shallow.

Another major reason for the non-transparency of investment plans in the Sheikhdom lies in Qatar's internal politics, which will be elaborated on in Chapter 7. Whether Qatar is "punching above its weight" (Roberts 2011) cannot be answered in this study. Qatar does have a deep awareness of its water and food insecurity, which it seeks to tackle through a range of internal and overseas investments. All of the plans identified in the above analysis involve a high degree of foreign policy making including complex engagements with African and Middle Eastern governments. The Sheikhdom's range of choice can only be expanded to the extent that these international relationships can be effectively established.

#### **6.10. The Arab Authority for Agricultural Investment and Development (AAAID) lessons**

Another reason for Qatar's strong interest in pushing its regional and African strategies conceived and directed from Qatar is the failure of the AAAID organisation over the past thirty years. As one decision-maker, who is also on the board of AAAID, stressed: "AAAID doesn't provide the answer for future food security policies in the region." AAAID is seen as a Saudi initiative with "highly political appointments" to oversee agricultural investment in Sudan (Key-Informant #7).

In recent years, AAAID has become an institution to increase the personal rents of politicians in the region. Although AAID was originally allocated US\$ 500 million, the company never accessed all of these funds. Instead the representatives of major shareholders from Sudan, Saudi Arabia, Jordan, Kuwait and UAE were given seats on the supervisory boards of several dozen companies to represent the company at board meetings in Khartoum and Dubai.

AAID's operations have been infiltrated by the corruption and by rent-seeking behaviour of its board members. Despite the company's agenda to provide food security via agricultural development in Sudan, the board members "are not bothered" about increased food production as long as they get their fees, travel expenses and extra cash-hand-outs (Key-Informant #7). AAAID represents the failure of states in the Middle East, in what has been assumed to be a well-financed cooperative mode to provide food security for the region. At present, the company's set-up aims to re-invest surpluses to generate more financial returns, which, in return, are handed out to the board members appointed by the governments of all of the shareholders (Key-Informant #7). As a result, Qatar has intentionally deviated from the past "pan-Arab" strategy to develop Sudan's agricultural potential. Economic nationalism has been pursued by the Qatari state through all its initiatives and involvements in the region and beyond, therefore Qatar's agricultural investment strategy confirms this economic nationalism notion (Khatib 2013).

In all of these activities "growth" as identified in the Pragmatic tradition has been derived from both international and regional experiences with the "food regime". New circumstances have been encountered in the form of increasing water scarcity. Qatari

decision-maker stressed that “the water crisis is already there” (Key-Informant #1). Virtual water “trade” as the remedy is the key international driver for re-engagement with the global “food regime” that is invited to participate in the Qatari strategies. It must be stressed that all initiatives lack transparent participation of the ABCD and NOWS. The global food traders have been approached but no information has been available whether they consult the Government of Qatar (Key-Informant #1). However, international organisations and thus the structural power of the Western world in global food politics are publicly incorporated by Qatari decision-makers into strategic plans to address the food security dilemma of Qatar (Doha Declaration on Food Security in the Drylands 2012). For example, leading representatives such as the FAO General Director or the senior management of the World Bank were present at the 2012 Food Security in the Drylands conference in Qatar (FSDL 2012). Mega-plans, with a 2022 horizon, foresee the transformation of Qatar into a regional food hub that is based on sophisticated foreign policy measures. The intent is to put these in place gradually over the coming years. Whether these plans will provide improvements to the food security dilemma will be discussed in Chapter 7. Meanwhile, Qatar as the richest-country per capita in the world, has ready access to a wide set of options to expand its range of choice including through virtual water imports. How international political options influence Qatar will be decided over time. Jordan, however, does have the rich resource base of Qatar. The international politics of the range of choice in Jordan will be addressed in the next sections.

### **6.11. Perceptions on the global “food regime” in Jordan**

The Hashemite Kingdom’s position in the global “food regime” is of a very different nature to that of Qatar. Jordan has endured the position of an “aid economy” supported

by the United States and other Western countries since the 1940s. This “aid economy” also provided the Jordanian economy with many benefits such as receiving privileged access to food and embedded water in traded food from the United States through Public Law 480. Between 1999 and 2007, Jordan received approximately US\$ 238 million through PL 480 to purchase wheat from American producers. Between 2007 and 2010, Jordan did not receive any aid assistance. However, flows of aid were revived in 2011 and 2012, when the United States authorised US\$ 36 million as food aid to obtain 50,000 tonnes of wheat each year from the actors of the global “food regime” (Sharp 2012: 12-13).

In Jordan, the food price spikes of 2008/09 and 2010/11 were differently perceived than in Qatar. A former decision-maker involved in both the public and private sector stressed, “Our required imports were not underwritten by the United States during the 2007/08 price spikes but only during the second price increases in 2010/11. The price spikes also provided us with an opportunity to increase our trade share within the region and beyond as a consequence of our comparative advantage in vegetable and fruit production” (Key-Informant #4, 19).

The comparative advantage of the Jordan Valley to produce food on its East Bank of the Jordan provides the country with a distinct advantage. It is able to produce food in the northern hemisphere winter months that can be sold to foreign markets. Jordan’s food producers in the private sector see Jordan as a potential player within the global political economy of food despite the small scale of the Jordanian crop production (Key-Informant #4, 19). Since most of the food exports are traded with the Gulf economies, the price spikes were seen as an unexpected but welcome opportunity for Jordan to

trade food for higher prices. Some former government officials pointed out, however, that there have been many political uncertainties for Jordan associated with the price spikes (Key-Informants #4, 9 11 and 13). These uncertainties have been translated into dependency on food imports from the global “food regime”. Yet, as shown above and in the background chapter, during the price spikes in 2007/08, Jordan did not receive Western support. As a consequence uncertainty about food security also became a matter of major concern in Jordanian policy thinking.

The Jordanian government decided upon a strategy to invest in farmland in Sudan to produce strategic commodities such as wheat, sugar, animal feed and livestock (Key-Informants #17 and 18; *Jordan Times* 2009). However, global trade dependency only explains one of the reasons for establishing a strategy of investing in farmland in Sudan. Chapter 7 will show that it was not only concerns about the global market that influenced the range of choice. The deeper reasons for rediscovering Sudan as a potential target country for agricultural production are also influenced by domestic politics.

A coordinated official government strategy akin to the Qatari strategy does not exist in Jordan. However, the role of power over water resources within the private sector has posed many public policy challenges that will be further illustrated in chapter 7. The Jordan government’s task differs significantly from those of the private sector. In Jordan, the main headache for decision-makers is the reliance on the importation of the strategic food commodities for which the country does not have sufficient water resources.

Given the interest of the private sector to take advantage of periods of higher food prices in the region, the rationale in Jordan has been to expand its range of choice to farmland investment in Sudan to utilise such farmland to produce key commodities for import. This approach is contrary to the Qatari objective. Jordanian government officials view food as a means to support the poorest in society. Therefore, the expansion of the range of choice to food imports from Sudan is influenced by domestic factors, which will be scrutinised in the next chapter.

The sought-after food commodities in Jordan are those that cannot be produced in Jordan on the scale required to feed the population as a consequence of the lack of water resources. Jordan's approach to price volatility has been that whenever prices increase, the National Food Security Company, attempts to distort market prices for basic foods by accessing low-cost food imports from Sudan. In the year 2010, the company imported 300,000 sheep from Sudan and un-reported volumes of wheat and sugar (Key-Informant #18). This approach shows that the decision-makers adopt pragmatic mind-set that has emerged from experience in handling previous spikes of dependency on the global "food regime".

The expansion of the theoretical range of choice to farmland investments in Sudan serves as an option to counter economic dependency at a time of volatile food prices. However, as will be shown in the next chapter, the reasons for price spikes are not only explained by events brought about by circumstances in the global "food regime". Food security in Jordan is a very highly politicised issue. It is subject to political power games within the political classes of the Hashemite Kingdom.



## **6.12. Conclusions**

This chapter has highlighted the role of the global “food regime” with its powerful specialised supply chains in key food commodities in a world faced with limited water resources. It has shown which actors influence the range of choice in Qatar and Jordan. The global “food regime”, as the superstructure in global agriculture, serves as an overarching condition. Events in this regime can trigger the need to expand the theoretical range of choice. The chapter concludes that expanding the range of choice to a country independent of the corporate “food regime” provides decision-makers concerned about food and water security with a means to become geopolitically less dependent on the Western food supply chains in periods of high and/or volatile prices. The embedded water in food can provide a geopolitically independent remedy to water scarcity in the two investing economies. In particular, the interest in meat production in Sudan provides Qatar and Jordan with the option to produce water-intensive animal feed and meat in Sudan. Virtual water plays a key role in the expansion of the range of choice.

The underlying rationale for the international influences on the theoretical range of choice must be understood in the context of the globalised economy that has the capacity to expose the vulnerability of Qatar and Jordan to food insecurity. Although the strategies of the two investing economies remain shallow and non-transparent, accessing Sudan’s natural resources could be an option for Jordan and Qatar to decrease dependency on food imports from the “food bowls” in Americas, Australia and Asia. This chapter has shown that these “food bowls” are controlled by the ABCD trans-nationals with the support of the US and European governments and the NOWS. Past experiences with the two Western-influenced “food regimes” have left lasting memories

in the minds of the decision-makers in the region that make them adopt precautionary policies where possible. They would like to influence the global “food regime” through deeper engagement with it. But so far they have had little success in this area. This experience had led them to attempt to be more independent of it. However, while in Qatar the perceptions of the global “food regime” is that it is a threat to Qatar’s economic growth, in Jordan it is seen as an economic opportunity to utilise the comparative advantage of the Jordanian agricultural sector to produce food in the winter months for export. The global “food regime” is not seen as a potential threat to Jordanian food security but rather an opportunity. In Jordan the reasons for expanding the range of choice are the need to produce food for the domestic market to provide strategic supplies. However, the international dimension is only one factor that influences the range of choice. More importantly, the role of political power at the sub-national level in both countries needs to be analysed to provide a full answer to the question why Jordan and Qatar seek to expand their range of choice. The next chapter will analyse therefore the role of the “shadow state” in the theoretical range of choice.

# **CHAPTER 7:**

**THE DOMESTIC POLITICAL-ECONOMIC**

**DRIVERS OF THE EXPANSION OF THE**

**RANGE OF CHOICE TO FARMLAND**

**INVESTMENTS BY JORDAN AND QATAR**

## **7. THE DOMESTIC POLITICAL-ECONOMIC DRIVERS OF THE EXPANSION OF THE RANGE OF CHOICE TO FARMLAND INVESTMENTS BY JORDAN AND QATAR**

*“In many ways, the unfolding crisis in the Middle East is not just about the Arab state – its failed efforts to redistribute, reform and represent ordinary citizen’s interests. It is also about the private sector – or, more appropriately, its absence. A singular failure of the Arab world is that it has been unsuccessful in developing a vibrant private sector that survives without state crutches, is connected with global markets, and generates productive employment for its young. With few exceptions, the private sector is generally weak and dependent on state patronage; success in it is determined more by patronage than entrepreneurship. With the public sector as the main avenue for job creation, the region suffers from a precarious employment strategy that leaves it unprepared to deal with demographic pressures. “*

(Malik and Awadallah 2011: 3).

### **7.1. Introduction**

The preceding chapter has illustrated the influence of the international “food regime” on the theoretical expansion of the range of choice of Jordan and Qatar in relation to farmland investments in Sudan. It showed that Jordan and Qatar are pressured by the power of the international “food regime” to find alternative options to provide food security. Western politicians in their foreign policy making exerted the political power of the US dominated global “food regime” during the oil crisis of the 1970s and in the

aftermath of the US invasion in Iraq in 2003. This chapter will review the internal politics of Jordan and Qatar and show how the contested history of both countries has influenced the expansion of their range of choice to farmland investment.

An analysis of the range of choice of policy options for water management would be incomplete without taking the domestic agricultural and food security politics into account. These have shaped the direction and scale of local farmland investment that in turn has depleted the water resources of Jordan and Qatar on which the sustainable security of these strategic investments depend. This outcome was illustrated in the background material in the introductory chapters. In Jordan and Qatar, the same actors engaged in the domestic political economy of food production are also in charge of overseas farmland investments.

The aims of this chapter are therefore twofold. First, it seeks to understand the internal political power games in Jordan and Qatar that have determined decision-making on local water resources and the management of food security. Second, it seeks to explain how the internal political players, who populate the “shadow state”, influence the decision to search for alternative options across the Red Sea on the African continent. As defined in Chapter 4, a “shadow state” is a neo-patrimonial form of rule that exists behind the official facade of laws and government institutions. Authority is based upon the decisions and interests of powerful individuals, not a set of written laws and procedures, even though these formal aspects of government may exist. The actors are tied to a ruler through a common regional background, kinship of tribal affiliation (Tripp 2007: 259).

The comparativist strand of political science has long highlighted the importance of analysing both the domestic and international political spheres to provide a holistic overview on which to base foreign policy decision-making (Katzenstein et al. 1998; Lida 1993; Evans et al. 1988). The same applies to an analysis of the range of choice available to policy-makers. Thus, it will be shown in this chapter that the condition of *domestic agriculture* is a significant driver of the expansion of the range of choice with respect to access to and utilisation of the “virtual basin” in Sudan by Jordan and Qatar.

In Jordan, the “shadow state” has been subject to severe challenges as a consequence of the Palestinian question. The “shadow state” has drawn its members from the Transjordanian elites since the Hashemites established their rule in Jordan in 1921. However, as a result of the regional history since 1948, Palestinian families have gradually infiltrated the East Bank “shadow state”. The participation of the elite commercial Palestinian families and their capital has had profound impacts on the political economy of food production and trade in Jordan, which illustrates that the Jordanian “shadow state” has undergone structural changes as a result of Palestinian economic and social power within the state. For example, the highly contested Disi project in southern Jordan in which both East Bank and Palestinian families have played prominent roles has been subject to severe criticism from international donors for devoting high value water to low value crop production.

One response of the Jordanian government was to offer Sudanese farmland to four investing families in Disi in exchange for the groundwater of the Disi aquifer so that it could then be used to provide high value water services for Amman. In Qatar, the domestic agricultural sector is also subject to internal political-economic struggles in the

form of rent seeking by the political stakeholders within the “shadow state”. In Qatar, two influential camps around the Prime Minister and the Crown Prince invisibly contest each over who controls international activities such as farmland investment (Key-Informants #27 and 28).

Any analysis of policy options in Middle Eastern countries must also take into account the difficult and often tragic history of the region including the many major disruptive foreign interventions of the past century as well as the constant manipulation of the region in the interests of sustaining secure energy supplies for key global players (Mitchell 2011). Streams of knowledge that involve historical, sociological, economic and political events and developments influence the “growth of experience” in a pragmatic sense. The mind-sets of decision-makers in the Middle East are shaped by this highly complex knowledge, which is the outcome of these complex and often non-transparent processes.

The chapter will answer Research Question 2 and Sub-Question 2.1. It will address the impact of the domestic political economy of food production and trade in Jordan and Qatar on agricultural investment decisions relating to the acquisition of *control over* distant food and water resources. Both questions introduced in Chapter 1 will be addressed and the first hypothesis, “*The decision-makers in both economies seek to decrease water use in agricultural production by expanding their range of choice to agricultural imports from Sudan. In particular, these initiatives can provide alternatives to domestic demand-side water management*”.

*The hypothesis* will be tested by investigating the domestic politics of agriculture in Jordan and Qatar and their historical roots. Influential stakeholders in the agricultural sector have been part of the “shadow state”. This condition will be examined in testing the second hypothesis, *“The agricultural sectors of both economies are subject to severe internal political pressures from farming interests from within the “shadow state”. Internal actors in inefficient agricultural sectors pose severe constraints to current government decisions. Water resources are highly political in both economies; hence expanding the range of choice to the virtual basin in Sudan can decrease the influence of some of the interests within the “shadow state” on water resources management in both economies”*. The testing of the two hypotheses will be based on interviews and participant observation conducted in Jordan and Qatar in 2011 and 2012. The evidence will enable a deeper understanding the range of choice available to the two economies.

The chapter will be structured as follows. First, the domestic political economy of agriculture in Jordan and Qatar will be reviewed. It will describe the formation of the “shadow state” in both Jordan and Qatar and how they have changed through internal and external political developments. Second, the political drivers that have influenced the range of choice of FDI in land from within the two economies will be analysed using the data and information acquired during field visits. Third, the review and evidence will feed into a discussion on Pragmatism that is integral to the range of choice activities in both economies. It will be shown that agriculture is a highly politicised issue that exerts extreme pressures and constraints on decision-makers.



## **7.2. The political economy of agriculture in Jordan and Qatar**

In this section, the domestic political economy of food and water in Jordan and Qatar will be reviewed. As was shown in the background chapter, Qatar's agricultural sector is negligible compared with that of the farming sector in the Hashemite Kingdom of Jordan. Water is the key constraint in both economies to expanding domestic agricultural production. Agriculture is a highly politicised sector in both political economies where major social and political power asymmetries exist.

The following sections will also identify the influential actors that populate the "shadow state" in both countries and discuss the nature of their interests and their influence. The role of allocative power in the political economy of agriculture in Jordan and Qatar is very usefully explained through the lens of the "shadow state" concept, which illustrates the impact of social power on the theoretical range of choice in the agricultural sector. It will be shown that farmland investment options are used as a political trade-off to appease political actors within the "shadow state".

This chapter will identify the very different nature of the two economies and will provide evidence of the expansion of the range of choice to include FDI in Sudan's farming sector. While in Jordan powerful farmers - some of whom operate inside the "shadow state" - influence agricultural water management decisions, in Qatar such decisions are made by members of the ruling family on the basis of a number of assumptions about economic growth. These nodes of power in the two economies are important and determine decision-making outcomes. These outcomes in turn prompt pragmatic responses that include the driving motifs of the expansion of the range of choice to agricultural investment in Sudan.

It will be shown that the “lived experience” of the history and ways in which the state was established in the two countries provides the range of choice concept with much depth. It gains this depth because domestic pressures on alternatives to demand-side management of water resources are the result of the existence of deeply embedded structures in the respective political economies and their respective “shadow states”. These deeply established social structures have been in place since the end of World War I when the “modern” Arab state came into being. This chapter seeks to explain why the choice of agricultural investment is principally an *expression of sub-national power disputes* that stem from the structure of the Jordanian and Qatari societies. The first country to be discussed will be the Hashemite Kingdom of Jordan.

As shown in the background chapter, further growth of Jordan’s local food production is severely limited by a lack of water resources. This resource constraint is important but it is not more important than the power relations that shape the range of choice of policy options in the Hashemite Kingdom. A major purpose of this analysis is to establish the significance of the power of the “shadow state” in Jordan in the allocation and use of water resources. Which of the alternative allocative options for Jordan’s water resources is chosen is decisively political. Jordan’s farming sector mirrors the country’s history very closely. As a consequence a necessary preliminary to an analysis of the allocation of natural water is awareness of the history of the modern Jordanian state and the role of social power in Jordan’s twentieth century history.

### **7.3. The formation of the state**

Current policy choices relating to the use and management of natural water in Jordan cannot be understood without awareness of the history of modern Jordan. The defining moment in the formation of the Hashemite Kingdom occurred during the First World War. The tribes of Jordan successfully fought in the “Great Arab Revolt” of 1916-18 against the Ottoman Turks, who had controlled the area for four centuries. While the inhabitants of the north of the area had associated themselves with Syria, the southern part had traditionally been affiliated with the Arab peninsula. During the Ottoman reign, given its semi-arid geography, the area of Transjordan had almost no political significance. Its population consisted of only a few hundred thousand Bedouin people. The clashes of the great powers during the First World War however gave Transjordan a new strategic role, which has continued to this day.

Led by the Hashemite family under the leadership of Sherif Hussein of Mecca, the Arab Revolt loosely allied bedouin and other nomadic tribes to fight the Ottoman army in the name of Arab nationalism. The Hashemite clan, originally from the Hejaz region along the Red Sea, led the Revolt with the tacit support of the British Foreign Office, which viewed the Arab Revolt as a proxy war against their German-Ottoman foes. Sherif Hussein aspired to gain control over Damascus to allow the Hashemite tribe to create a state in and around what is Syria today. Transjordan was viewed as the “hinterland” of Damascus and Palestine with no real political significance (Robins 2004: 11-15).

However, London and Paris had plans to divide the region according to their interests. At the same time, the Zionist ambition to establish a Jewish state in Palestine, soured relations between the British and the Hashemites. It took until 1921 to broker a deal

proposed by the British. Winston Churchill convinced the Hashemites and other Arab families during the Cairo Conference, held at the Semiramis Hotel on the west bank of the River Nile, to find a compromise that allowed the Hashemite leaders to rule over Iraq and Transjordan. Hussein's sons Abdullah (Transjordan) and Faisal (Iraq) were installed as rulers. However, although Iraq was allowed to become a Kingdom by the European powers, Transjordan was given the status of an Emirate under British protection from 1921 to 1946. It was not until after the Second World War that Abdullah was proclaimed King of the Hashemite Kingdom of Jordan. The British controlled the pace of the political transition in Transjordan. Throughout the period the activities of those wanting to establish a Jewish state in Palestine progressively enhanced the geopolitical significance of Jordan (Robins 2004: 3-6).

Abdullah had aimed for rule from Damascus. But he won Amman. The allegiance of the East Bank tribes was not a free gift to the Hashemites. Allegiance had to be earned through privileged access to resources such as land, power and money. The Transjordanian tribes had traditionally engaged in pastoralist nomadic livestock herding, artisan trading with the Ottomans, and barter-trade within peasant communities (Robins 2004: 6). In the 1920s, several clans rebelled against the new ruler. This opposition posed great challenges to Abdullah and the British colonisers who had to appease the tribes in order for them to accept his authority.

During the 1930s and 1940s, Abdullah knitted together the diverse political elements into a state. Against the background of the severe economic crisis of the 1930s that affected Jordan as well as the rest of the world, government employment and patronage became an important source of income for tribal leaders. A careful process was put in

place that granted each tribe representation and participation in the emerging state (Alon 2009:114-118). Part of this political process was an absence of tax collection in order to avoid tensions with local tribes (Robins 2004: 15). As a consequence Jordan was largely dependent on British remittances to establish a state. The political order designed for 500,000 Transjordanians brought stability and prosperity to Jordan during the course of the 1940s. However, the foundation of Israel in 1948 dramatically altered regional international dynamics and had a major impact on the way Jordanian state institutions evolved as a consequence of Palestinian issues.

### **7.3.1. The Palestinian “turning point”**

The 1948 Arab-Israeli war marked a turning point for the Hashemite rule and the beginning of a gradual power shift within Jordan’s elite. While only 500,000 people lived in Transjordan, the gradual influx of Palestinian refugees led to a dramatic transformation in the demography of the country. Initially, the Palestinian refugee problem was seen as a short-lived phenomenon, which would go away after the Israelis were defeated. Jordan annexed the West Bank in 1948 and provided the Palestinians with Jordanian citizenship. Governing Palestine included many challenges. One of the challenges was to provide sufficient affordable food supplies for the population of Jordan and its recent immigrants.

Surplus food commodities available during the second - US dominated - global “food regime” proved to be importable. Jordan’s range of choice in food policy options increasingly depended on the global market. However, the problem has always been in the background and from time to time has been foregrounded. It has remained a constant challenge in the decades since the 1950s.

In the Six Day War in 1967, Jordan sided with Egypt, and it lost authority and effective sovereignty over the West Bank to Israel. The violent disruption led to a further estimated 250,000 Palestinian refugees coming to the smaller post-1967 Hashemite Kingdom on the East Bank of the Jordan. The Palestinian problem intensified and has endured, which gradually led to severe problems of integration, which are outlined in the next section (Dallas 1999; Day 1986).

### **7.3.2. Identity politics in Jordan**

For the purpose of answering the research questions asking how internal politics have determined what policy choices have been made regarding FDI in farmland in Sudan, the historical development of the “shadow state” will be introduced. The developments in Jordan after 1948 did not at first greatly affect the social power hierarchy in Jordan. However, the influx of Palestinians into Jordan after the unsuccessful wars of 1948 and 1967 caused a number of political and economic challenges for the Hashemite led government. After a Palestinian assassinated Abdullah I. during the Friday prayers in Jerusalem on 20<sup>th</sup> July 1951, his son Talal inherited the throne but was diagnosed with a mental illness 13 months after his accession. On 11<sup>th</sup> August 1952, the then 16-year old Crown Prince Hussein was proclaimed King of the Hashemite Kingdom of Jordan (Robins 2004; Dallas 1999).

After the unsuccessful military attempts by Jordan, Egypt, Lebanon, Syria and Iraq in 1948 to defeat Israel, the Palestinian national cause to liberate their homeland from the Israelis led to the establishment of Palestinian nationalist movements, namely the Palestinian Liberation Organisation (PLO) in 1964 at an Arab League Council meeting.

The PLO adopted military guerrilla campaigns to destabilise what was seen as the “Zionist entity” (Day 1986: 31; Bailey 1984: 22-23; Lynch 1999: 26).

King Hussein viewed the political national struggle for Palestine as an increasing threat to national security in Jordan. His grandfather handed out Jordanian citizenship to all West Bankers in the aftermath of the 1948 war. However, the PLO, under the leadership of Yasir Arafat, did not agree to any settlement with Israel (Day 1986: 28). East Bank Jordanians viewed Palestinians as ungrateful traitors who refused the generous offer to become part of their nation under the leadership of the Hashemite King Hussein.

The resulting identity-divide between the Palestinians in Jordan led by Arafat and the East Bank Jordanians loyal to the King has continuously impacted decision-making on how to develop the economy. Jordanians, who supported the Hashemite-led Arab Revolt in 1916, were given privileged access to state resources via positions in the military and in the Jordanian bureaucracy. Palestinians had to pursue careers in the private sector, and faced restrictions imposed by the Jordanian state.

The Palestinians in Jordan did not agree to a Transjordanian compromise on domestic power relations. Discrimination against the Palestinians in Jordan and the influx of more Palestinians after the 1967 war led to the adoption of different nationalist ideologies on the part of Jordanians and Palestinians. The confrontation culminated in the *Black September* events in 1970-71, when a civil war was waged between the oppressed Palestinians and the ruling Jordanians over the leadership of the country. The PLO had increasingly become a state within a state, which King Hussein had to counter militarily (Robbins 2004: 126-128; Lynch 1999: 78-79).

The civil war lasted until June 1971. A political agreement to end the war had already been made by King Hussein and Arafat in Cairo as early as October 1970. The agreement led to the expulsion of the most militant PLO fighters, who moved to Lebanon. Hussein's position as the sole leader of the country was strengthened and there was acceptance of Hashemite rule by the Palestinians. However, the agreement had a price. Apart from official recognition of the PLO as the main representative of Palestinian affairs, which provided the organisation with legitimacy, the political and economic discrimination was gradually eased (Robins 2004; Bailey 1984: 117)

From 1971 onwards, the Jordanian state had - at least officially - to treat all citizens equally and open its economy to all citizens regardless of their identity claims. The economic discrimination against the Palestinians, which had lasted for more than twenty years, had a profound effect on who did what in shaping the economy of Jordan. While the Jordanian numerical minority had privileged access to state resources, the Palestinian numerical majority had to find alternative jobs and means of income. As mentioned above, economic security for communities and individual families was sought, in particular, in the private sector.

A small but important faction of the Palestinian bourgeoisie in Jordan achieved notable success in the private sector. After the Hussein/Arafat agreement, this Palestinian bourgeoisie chose allegiance to the King in exchange for low state intervention in their business practices. Another group of approximately 200,000 Palestinians used their Jordanian citizenship to obtain visas in the Gulf States to participate in the oil boom and remit their incomes back to their families in Jordan. The high salaries paid in the Gulf



were often wired to bank accounts in Amman, where the money was re-invested by other family members into the Jordanian economy (Brand 1995). At the same time, a gradually increasing number of Palestinians were given leading positions in the Jordanian state and parliamentary bodies. They participated in decision-making including at the level of minister and prime minister. However, the state, and therefore the Transjordanian tribal hegemony within the domestic political economy of Jordan remained largely untouched. This model came to a gradual end following the economic recession of the 1980s, which will be introduced in the next section to show how the “shadow state” experienced and adjusted to gradual change.

### **7.3.3. The end of an economic model**

Until the 1980s the Jordanian economic model was based on state-led intervention funded by aid transfers from the international community and the Gulf and remittances from Jordanian workers, professionals and entrepreneurs. Approximately one third of Jordan’s gross national income comprised Gulf and Western money. As a result, Jordan enjoyed one of the highest economic growth rates every year between 1973 and 1982, reaching up to 11 per cent annual growth. The state used this “golden decade” to stabilise the country by buying the loyalty of a larger group of Jordanian and Palestinian elites and their communities through direct money transfers (Alissa 2008). This process resulted in a gradual decrease in social divisions within Jordanian society. Identity became less important. However the identity issue never completely disappeared as the experience in the agricultural sector has shown. The manner of farm investment, water and other resource management and mismanagement and commodity marketing in Jordanian food supply chains is explained by the approaches of Jordan’s different identity-defined communities. The economic model established in the aftermath of the

civil war, however, was, in the end, unsustainable. The model had failed by the late 1980s with consequences for the “shadow state” and especially for many actors in the “shadow state”. The intervention of international donors also made the old compromise between the Hashemites and the Transjordanian elite increasingly unsustainable, as explained in the next section.

#### **7.3.4. The struggle of the 1980s: the advent of neoliberalism**

The end of the oil boom in the Gulf in 1979-1980 was a consequence of declining global oil prices. This was an important period in Jordan’s social history. By 1983 lower remittances and aid transfers from the Gulf to Jordan were evident. At the same time demand for Jordanian labour and products in the oil-producing countries declined. The on-going war between Iraq and Iran diverted the attention of Gulf leaders to assisting their Sunni brothers in Baghdad. Sky-high unemployment levels occurred as a consequence of a mass return of workers with Jordanian citizenship from the Gulf during the 1980s, which prompted the government to increase its external borrowing to maintain economic and social stability (Alissa 2008).

In 1988, the Jordanian Dinar declined steeply by 33 per cent within 12 months. The severity of the economic crisis left the government with no other option than to call for international support. In April 1989, the International Monetary Fund (IMF) and the World Bank were invited to provide an emergency loan of \$250 million, which was agreed in August 1989. The IMF and World Bank demanded austerity measures as a condition for the loan. This marked the advent of alien neoliberal principles in the Kingdom and led to a power shift of power from the state to the market. Since the private sector was already largely controlled by Jordanians of Palestinian descent, the

implementation of neoliberal reforms, as demanded by the IMF, allowed them to increase their economic and then their political leverage in Jordan (Key-Informant #41). This power shift also affected the set-up of the “shadow state” because the King had less rents to share with the old Transjordanian elites.

Meanwhile, poverty levels increased due to the inability of the state to control the economy. The only sector that was largely spared from these austerity measures were the agencies responsible for national and sub-national security given that the region was highly volatile and Jordan’s international allies were keen to stabilise both the economy and the politics of their very important strategic regional ally.

Since the agricultural sector is a vital part of the economy, the power shift also affected the politics of food in Jordan. This, in part, answers research sub-question 2.1 to provide an understanding of the reader on how the “shadow state” in modern Jordan has evolved since 1921. The agricultural sector became a major focus for investment for the beneficiaries of the retreat of the state in the late 1980s and the 1990s. These beneficiaries have played an increasing role in the “shadow state” and they are very influential in Jordanian agriculture. They have decisively influenced, and continue to influence the investment policies in agriculture in Jordan. Their role in the agricultural “shadow state” will be explained in the next sections and the powerful actors will be identified. This will further contribute to answering research sub-question 2.1 to illustrate who shapes the power relations in Jordan’s political economy of food.

#### **7.4. The politics of farming in Jordan**

In the immediate aftermath of the 1948 war, Jordanian landowners often employed Palestinian refugees as farm labourers. Palestinian refugees were often from farming backgrounds themselves, and could therefore contribute important skills to the Jordanian economy (Key-Informant #42). Their offspring in turn studied agriculture, management and other subjects important to the economy and soon found other opportunities in agriculture and in particular agricultural trade (Key-Informant #10, 14, 41 and 42). As the previous chapter showed, vertical integration has been a defining feature of the second and third “food regimes” that lasted from 1945 to 1980 and 1980 onwards respectively. Vertical integration in Jordan meant the gradual economic involvement of Palestinians in agriculture over the decades to develop the potential of the agricultural sector from the level of the farm to the international marketing of food commodities. For the development of the farming sector, management expertise for trading was especially useful to make use of Jordan’s agricultural potential.

The laissez-faire approach of the Jordanian state included the granting of large tracts to farmers and the right of large farmers to collect taxes from smaller farmers. When the smaller farmers couldn’t pay, land was handed over in exchange to the larger farmers who used the transfer of assets to settle their outstanding taxes (Keulertz 2008). Over the decades, a number of Palestinians in Jordan, who initially provided their skills to manage farms, acquired land to find an economic refuge in an environment of discrimination. Since some of the Palestinian elites went abroad to study for higher degrees in agriculture and management, they enjoyed a comparative advantage in agricultural skills compared to their Transjordanian counterparts (Key-Informant #42). Although it is important to stress that their motives were not initially political, a

politically significant vertical integration occurred as a result of economies of scale, which lowered production costs.

It is also important to stress that not only the Jordanians of Palestinian descent became large-scale farmers. In spite of access to state resources through the power compromise between the Hashemites and the Transjordanian tribes, a small number of Transjordanian families had also acquired large land holdings in the highlands around Amman. Their aim was largely to sell their produce on the food commodity markets in Amman. However, given the privileged access to state resources and the minimal public rents in agriculture, agriculture offered few rents for the elites until the 1970s and 1980s (Key-Informant #42).

The consequences of the political-economic developments in Jordan in the aftermath of the 1970s and 1980s overlaid this long evolved rural political economy. At the same time, the growing importance of agricultural trade as a by-product of the global corporate “food regime” provided new opportunities for food traders. In particular, the food traders benefitted from the opening of new markets in Jordan through the intervention of the IMF. These consequences had a decisive impact on the nature of the agricultural “shadow state”. In particular, the Palestinian agrarian bourgeoisie became actively involved in international agricultural trade. This partly answers research sub-question 2.1 on the nature of the agricultural “shadow state” and who the government needed to deal with in order to reach decisions over the Jordanian range of choice.

The next section illustrates the role of trade and the environment to show how the economic success of the powerful players in Jordan’s agricultural sector affected the

environment to provide further background information on why farmland investment is considered as one alternative in the range of choice that address the challenge of establishing a sustainable food and water security policy.

#### **7.4.1. Agriculture and agricultural trade**

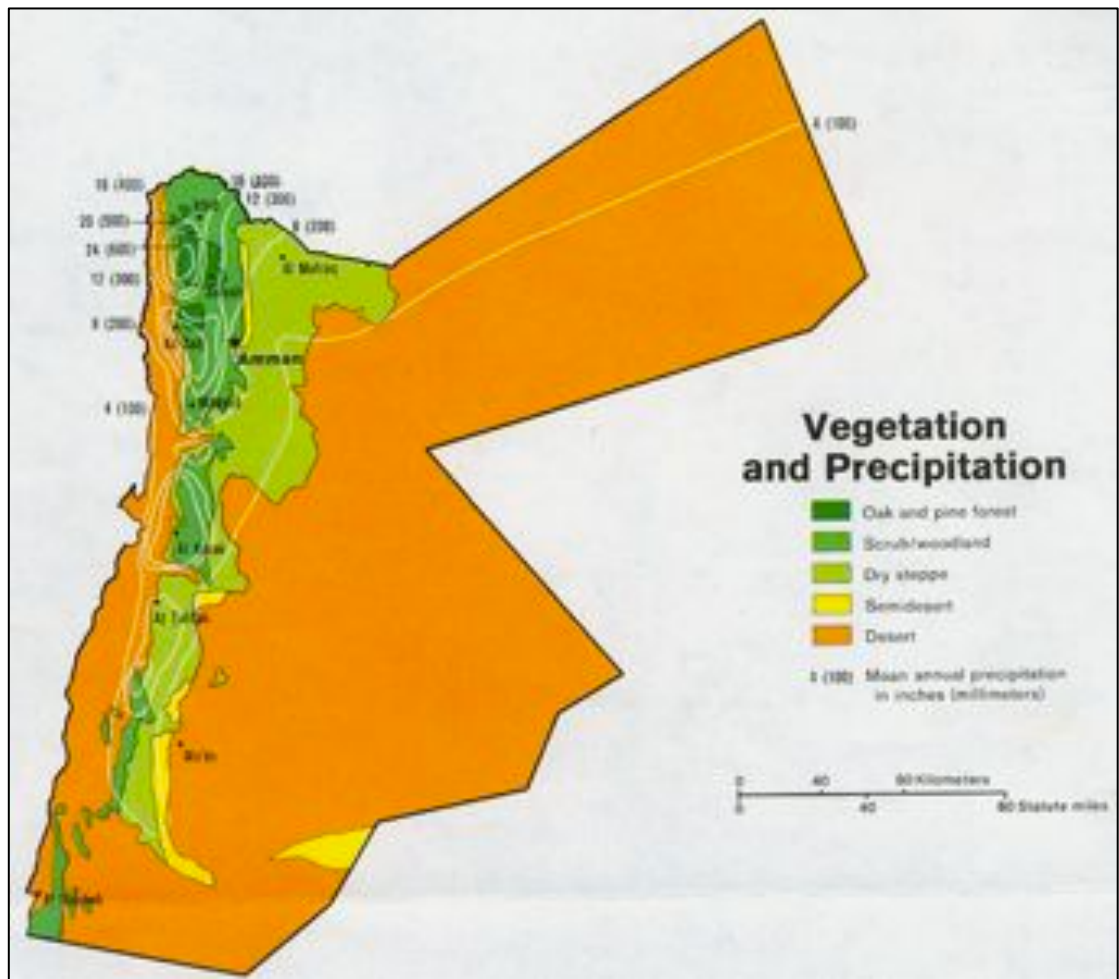
The purpose of this section is to illustrate and analyse the processes that increased the power of Palestinian businessmen in agriculture how such developments affected the Jordanian “shadow state”. This evidence contributes to answering the research sub-question 2.1 to show that not only access to domestic agricultural resources have impacted the range of choice but the food trade and food traders also had a significant impact.

The development of the Jordanian political economy of agriculture has resembled the socio-economic history in the country. While the Transjordanian elite was either appeased by the Hashemite rulers through state rents, giving them access to resources such as positions in the bureaucracy and the military, only a few Transjordanian families were involved in large-scale farming activities. The majority of Transjordanian farmers were smallholders who farmed on small plots of land. As a result, the Palestinians in Jordan had to find alternatives in agricultural trade. It is important to stress that the role of agricultural trade is of paramount importance in gaining an understanding the power of the Jordanian “agricultural “shadow state”.

Agricultural economic success is based on the comparative and competitive advantages of access to the natural endowments and also to privileged access to institutions of a political economy. Farmers and traders rely increasingly on the returns from the

production of fresh fruit and vegetable production. International trade between Jordan and the rest of the world increased in these commodities in the course of the 1970s and 1980s (Key-Informant #9). The Jordan Valley is a “natural greenhouse” that allows Jordan to farm fruits and vegetables for European markets in the crucially important winter months when the Western corporate “food regime” requires fresh food to sell to its consumers (Key-Informant #9 and 11). Western and Gulf markets have readily absorbed Palestinian output. Jordanian investment expertise and skills have gradually brought about a steady expansion of the irrigated agricultural sector in Jordan (See Figure 7.1.).

As in many other semi-arid regions, the Jordanian “green revolution” was made possible by increasing yields through irrigation. The key natural resource input that has enabled the expansion of food production is “blue” water. As shown in the environmental background chapter, the use of Jordan’s “blue” water resources for irrigation has led to the depletion of groundwater. As in all semi-arid regions food production has increased at the expense of the country’s water ecosystems, as natural water resources have been over-allocated beyond sustainable levels.



**Figure 7.1. Jordan's Agricultural Map (Nationmaster 2013)**

Market success in agriculture and agricultural trade have provided significant rents for powerful social actors in Jordan's "shadow state", in particular those of Palestinian descent. Until the 1970s, agriculture played a minor role in the economy compared to security services, tourism and the civil bureaucracy. The power of the farming sector increased as a consequence of improved international trading conditions and the growing demand from the world's richer regions including the Gulf. The East Bank Jordanian elite families also enjoyed privileged access to positions in the military or economic assets associated with Jordan's rapidly expanding tourist industry. The



second and third generation of Jordanians of Palestinian descent were often left with the higher risk activities of finance and trade, including trade in agricultural commodities.

Arable farming and horticulture had long been considered to have poor prospects. It was not an attractive prospect for the Transjordanian elite before 1948. International demand to meet the needs of global food supply chains in the 1950s and 1960s had significant potential for a country such as Jordan with its seasonal climate. Demands for the Gulf added to those of Western consumers generated consistent and rising demands and significant economic opportunities for Jordanian businessmen involved in farming (Key-Informant #4 and 9).

The relatively slow take-up of the opportunities in and after the 1950s to supply international markets with high value seasonal commodities is mainly explained by international conditions. First, Western imperial geopolitics, during and after the First World War, had shaped the modern state of Jordan. Second, the Arab-Israeli War of 1948 destabilised the region through the movement of refugees. These Palestinian refugees were denied access to crucial political resources in Jordan. Third, by the 1980s, the opportunities for international agricultural trade as a consequence of the advent of the global food supply chains of the global corporate “food regime” allowed the Jordanians of Palestinian descent to increase their economic, and later, political leverage.

Other factors have also impacted agriculture and horticulture in Jordan since 1948. A fourth factor was the installation of new irrigation infrastructures in the 1970s, which has subsequently proved to be unsustainable. Fifth, the agreement of 1970, between

Arafat and King Hussein has also proved to be unsustainable. As have the power shifts in the aftermath of the neo-liberalisation of the Jordanian economy in the 1980s. The current attempt to expand the range of choice with respect to the constraining resource of water has, however, deeper political roots and political economy outcomes reflect the history of modern Jordan.

The next section provides a case study of a farm project in Southern Jordan, which reflects the above-illustrated political economic history of Jordan and how it affects Jordanian agriculture and the allocation, use and mis-use of water resources.

#### **7.4.2. The Disi farms - 1984 - 2012: a project reflecting “shadow state” politics**

This section shows how major players in the Jordanian “shadow state” determine who invests in what and who gains from such investments. It will exemplify how the Palestinians increasingly achieved market and then social power in Jordan’s agricultural sector and how their new power has impacted the nature of the “shadow state”. The case study will be used to explain the power shifts evident in the Disi farm projects in southern Jordan.

The Disi farms have since their inception in the 1984 been subject to Jordanian “shadow state” politics. The farms in the Quwaira area are close to the Jordanian border with Saudi Arabia. They provide a useful example of how power relations in Jordan have developed since the 1970s and how these power relations have influenced the range of choice with respect to the utilisation of groundwater (See Figure 7.2.).



**Figure 7.2. The Disi Farms and the Disi Aquifer (Courcier et al. 2005)**

The irrigation project in this area gets its name from the Disi aquifer, which underlies the Saudi-Jordan border. The Disi Aquifer is a fossil groundwater/"blue" water resource shared between Saudi Arabia and the Hashemite Kingdom. Given Jordan's

growing water scarcity, the Disi aquifer is seen as a crucial provider of potable water to Jordan's capital Amman. Discovered during a study by UNDP in 1969, the length, width and depth of the aquifer are 250km, 50km and 1000m respectively. The groundwater has accumulated over 30,000 years. Given the very low estimated recharge rate of 50 million cubic metres per year, as a consequence of the arid climate in the southern part of Jordan and in northern part of Saudi Arabia. Over-abstraction of water from the aquifer has led to first, salinization, and second, to complete depletion within decades. The collective abstraction rates by Jordan and Saudi Arabia are double the recharge rate (Ferragina and Greco 2008).

There are other problems associated with the development of the Disi groundwater in addition to the sustainable utilisation of the resource. The depth of the groundwater, which is 1000m, makes it costly to pump the water to the surface. The Government of Jordan decided in 1996 to commission an environmental feasibility study on the conveyance of water from Disi to Amman. In 2007, the Turkish company GAMA won the tender to construct the 325km pipeline costing \$1 billion, to pump water from Disi to Amman for 25 years. Delivery was to start at the end of 2012. The completion date was later deferred to 2013 due to construction delays. 100 MCM per year is the volume-planned rate of abstraction from the Disi aquifer. It is estimated that this withdrawal rate will lead to the total depletion of the aquifer within 50 years (Ferragina and Greco 2008).

More important than these technical and economic issues associated with the development of the Disi water resource are the contentious Disi hydro-politics. In the second half of the 1980s, four leading agribusiness companies (Rum, Wafa, Arabco,

Grameco) acquired the land rights in Quwaira in the area where the water-pumping infrastructure was to be constructed. The four agribusiness companies are owned by four leading Jordanian families. Both old East Bank families and Palestinian families are involved. All these families have been deeply involved in both national politics and in the Jordanian private sector. Among them were family members who had served as Prime Ministers of Jordan and Ministers for Agriculture. Described by a Key-Informant with Transjordanian roots as “the Jordanian political and agricultural mafia”. Three of the families are of Palestinian descent while one is from Jordan (Key-Informant #14).

#### **7.4.3. The commercial history of an investing family**

The Disi Farm experience has proved to usefully exemplify how the “shadow state” activities play out in Jordan. One investing Palestinian family is one of the most senior agricultural investors in the Middle East. The involvement of the Palestinian families reflects the evolving role of Palestinians in Jordan’s economy since 1948. Born in Nablus in the 1940s, the chairman of one investing company, Sabih Taher Al Masri, heads an umbrella enterprise that has invested in irrigated farming and in food processing first in Saudi in agriculture and later in processing in Jordan and Saudi Arabia. Al Masri established the enterprise called ASTRA (Arab Supply and Trading Co.) in the late 1970s in Saudi Arabia. Rum Agriculture in Disi is a subsidiary of ASTRA. Masri’s career therefore resembles a typical career of a Jordanian of Palestinian descent at the time of political discrimination of Palestinians in Jordan. The businessman is described as one of the most experienced and influential figures in regional agriculture (Key-Informant #14, 26, 36). He invested his money through investments in a 3500 hectares irrigated farms in northern Saudi Arabia and in food trade. The most successful period of his career was a geopolitical gift, which enabled

his agricultural, and food processing investments. Sabih Taher Al Masri had established close commercial ties with one of the Saudi princes in the 1980s. When the United States intervened in Iraq in 1991, this Jordanian businessman of Palestinian descent was given the task of supplying and catering for approximately 700.000 American soldiers over a period of six months. He charged approximately 30 US Dollars per person per day to provide them with food produced in his farms in Saudi Arabia and Jordan and what he needed to trade from around the globe. In total, it is assumed that the US Army ordered food worth approximately US\$ 3.8 billion over the period of six months. It must be stressed that Sabih Taher Al Masri had to transfer the majority of the revenues to the Saudi Prince, yet a Key-Informant estimated that he was allowed to keep at least US\$ 500 million for his services provided to the US Army. (Key-Informant # 14). Over the past thirty years, Al Masri has established one of the leading agribusiness companies in Saudi Arabia. His family used the revenues to expand companies that are active throughout international food supply chains, first in Jordan and later in Palestine. The company was one of the four merchant owned companies that purchased land in Disi in the second half of the 1980s (Key-Informant #14).

The Disi farms pump water from the Disi Aquifer, which Jordan shares with Saudi Arabia. The northern Saudi Arabian farm revenues were later used to diversify the company's portfolio through investments in a number of food commodity supply chains, in farming, trading, processing and contracting (Company Website of the investment company and Key-Informants #14 and 36). Two other agribusiness companies investing in Disi have similar histories and are similarly well-connected with the Jordanian "shadow state" (Key-Informant #14). Only one of the investing companies is owned by a Transjordanian elite family, which is also associated with the

Jordanian military (Key-Informant #14 and 19). The King in Jordan has been seen as a supporter of the Disi farms since their inception in the early 1980s.

The four agribusiness companies in the Disi area are amongst the major recipients of water from the aquifer. However, during the 2000s, the use of water from the Disi aquifer for agriculture came under heavy criticism in Jordan. The environmental threat of over-abstraction and the energy costs prompted former and then Government Ministers of Water to draw the issue to the public's attention (Hagan 2008; Key-Informants #10 and 11). Munther Haddadin (Minister in the 1990s) highlighted at the high energy costs and the mis-allocation of water to low value crops (Key-Informants #11 and 14). Hazim Al Naser (Minister from 2004-06) sued the four companies over their water use practices in 2007 (Ferragina and Greco 2008). The United States Agency for International Development (USAID) water expert Ross Hagan circulated a personal study in 2008, which openly threatened American withdrawal from the Jordanian water sector if the water concessions of the four agribusiness companies in Disi (and also if agriculture in the Highlands) were extended after the end of initial government concessions at the end of 2012 (Hagan 2008). Perhaps the most important message was that a growing number of Jordanians and foreigners in the water sector had started to criticise the "shadow state" in backroom meetings in Amman (Yorke 2013: 72). Water was used as an argument against the way the King was using the power of the "shadow state" to impair national interests.

With these combined pressures, the Kingdom's authorities decided in 2009 not to renew the concessions to abstract groundwater for agricultural production. However, in 2008 the government, led by Prime Minister Nader Al-Dahabi, offered the four agribusiness

companies the Sudanese farmland it had been allocated by the Sudanese government in Ad-Damar back in 1999 (Key-Informant #41). In the event, this land was initially cultivated by the Jordanian military owned company Al Bashayer.

The planning process for the Disi Farm started in 1999, but agricultural production did not start until 2002, and then it was only on a small area of approximately 5000 hectares, of the 250,000 hectares that had been allocated to Jordan managed by the Jordanian army company (Key-Informant #17). Thus a vast unused area was still available to other investors. The government offered this unused land to the private sector. This brings us to the politics regarding the range of choice to illustrate how investment in Sudanese land is part of the “shadow state” trade-off in Jordan.

### **7.5. The politics of the range of choice in Jordan**

The offer by the Jordanian Government to invite investors to produce food in Ad-Damar marked a pragmatic shift in approach to accessing sustainable food supplies produced with secure and sustainable water resources. Instead of using scarce and increasingly expensive water in Jordan, the private sector was offered the “virtual water” alternative in Sudan. This private sector consists of three Palestinian families and one Jordanian company closely aligned with the military. As one Key-Informant (#14) stressed, these families have direct access to the King. In the case of above-introduced Al Masri company, the King has been a loyal crony of the family because he was given shares of the company by the family (Key-Informant #4 and 9). This in turn provided the family with direct access and political leverage as illustrated later in this chapter.



The “shadow state” decisively influenced the range of choice relating to food and water security to be considered in Jordan in the late 2000s. The decision-making process that led to the expansion of the range of choice to consider “virtual water imports” reflects the politics and sociology of Jordan in the past three decades. In 2008, the Ministry of Agriculture conducted a feasibility study in Ad-Damar to determine the private sector’s potential alternative investment opportunities in exchange for Disi groundwater. The overall costs for the cultivation of 10,000 hectares were estimated at \$180 million. The private sector companies sought financial assistance from the Government in the form of a soft loan worth \$25 million (Key-Informant #13). The Jordanian Minister of Finance from 2007-2009, Hamad Al Kasasbeh, did not grant the sum requested by the private sector companies. Al Kasasbeh gained a reputation in Jordan for pursuing a neoliberal strategy by scrapping subsidies on fuel and barley, and hence he did not agree to install new hidden subsidies in the form of a soft loan to companies that he considered were financially well-endowed (Hadfield 2008; Key-Informant #13).

After cabinet reshuffles in early 2009 - still under Nader Al-Dahabi - and again in late 2009 - under Samir Rifai - a member of the Al Masri family, originally from Nablus in Palestine, Saed Al Masri, was appointed Minister for Agriculture. The cousin of Sabeh Al Masri also owns the largest agricultural trading company in Jordan, the Jordan River Company (JORICO) (Fernandez-Stark et al. 2011). His appointment raised concerns amongst some Jordanian experts working on agriculture and water resources (Key-Informant #18). To give the agricultural portfolio to a member of the new Palestinian elite was seen as a potential risk for the traditionally Transjordanian dominated “shadow state” in a strategically important area such as food security. A consequence was that a National Food Security Company (see Chapter 6) was founded by the Transjordanian

dominated military in November 2009, only 9 months after the appointment of the minister.

The head of the National Food Security Company described his company as “pure Jordanian importing food for all Jordanians” (Key-Informant #18). The objective of the company remained to import strategic food commodities such as wheat, rice, sugar and livestock from across the world to Jordan to underpin Jordanian food security and stabilise Jordanian food prices. As the head of the company stressed, “our objective is to ensure that the private sector does not dream of high profits because we only seek 2-4 per cent annual returns to keep food prices low in Jordan” (Key-Informant #18). In addition to its sister company Al Bashayer, the National Food Security Company is the other food wing of the army that intervenes in a market that has increasingly been taken over by Palestinian agribusiness. This must be interpreted as the response of the Transjordanian “shadow state” to counter Palestinian dominance in Jordan’s food trade.

Before the establishment of the National Food Security Company, Al Bashayer unsuccessfully grew wheat in Ad-Damar. Since 2010, live sheep have been purchased by the public company from Darfur, where they are transported to Ad-Damar in Northern Sudan for vaccination, fattening and slaughtering. In the calendar year 2011, this company imported 30,000 to 40,000 sheep to Jordan in order to stabilise market prices (Key-Informants #15, 16, 17 and 18). The private agribusiness companies were invited to join the army in growing food in Sudan (Key-Informant #41). This arrangement would have meant being controlled by the state, and in particular the military, in their business practices. As a result, they rejected the offer on commercial grounds (Key-Informant #13).

In April 2013, the Jordanian government liquidated the National Food Security Company but allowed Al Bashayer to continue its venture in Sudan (*Jordan Times* 2013, Key-Informant #9) According to a Key-Informant, this decision was demanded by agricultural traders in Jordan because the company had started to impact their businesses directly (Key-Informant #9).

In addition to purchasing food from Al Bashayer in Sudan, the National Food Security Company had started to intervene in the fruit and vegetables market, which is the prime source of income for the Palestinian-dominated agricultural “shadow state”. This suggests that the Palestinians in the agricultural “shadow state” have succeeded in pushing back the Transjordanian elites’ position in determining the way that food security is achieved in Jordan. Although they couldn’t stop the producer (Al Bashayer) from farming in Sudan, they dismantled the producer from its main customer (the National Food Security Company) to keep protect their position in the Jordanian market.

The Jordanian agricultural sector serves as an example of how one MENA economy works and how politics and related structural economic power have changed since a pivotal disrupting moment in its history such as 1948. In conjunction with Western pressure to advance neoliberal reforms since the late 1980s, the economic domestic sphere has altered to a point that the traditional Transjordanian elites felt threatened by the growing economic power of the Palestinian entrepreneurs. This outcome will be examined in the next chapter, along with an analysis of the challenges associated with overseas farmland acquisitions.

## **7.6. Pragmatism in the Jordanian context**

The purpose of this section is to show how Pragmatism helps to explain the drivers of farmland investment. This answers research question 2 on the rationale of the government to expand its range of choice to farmland investments in Sudan. The rationale of Jordan investing in Sudan is only superficially explained through food security concerns. It is argued here that Jordan's post-1948 political history is the main explanatory factor enabling an understanding of the drivers of the range of choice in addressing food security concerns.

The population explosion in Jordan after the influx of refugees from Palestine in 1948 has challenged and expanded the “shadow state” order that led to the disaster of the civil war that culminated in Black September in 1971. Only through vast aid transfers has the state managed to cope with the social tension that reached a peak in 1971. The mind-sets of decision-makers are shaped by these historic moments of elemental confrontation.

In order to understand the pragmatic nature of Jordanian policy-making on food security it is necessary to understand the concept of growth as used in this part of the analysis. Growth in Jordan is shaped by what is judged to be sound by those who operate the Jordanian “shadow state”. Tapping virtual water “opportunities” in Sudan as a substitute for scarce domestic water resources is not viewed as a “useful aim” in an economic/pragmatic sense. It is rather, a useful political intervention that keeps the political order in place. It is just another chapter in the history of the retention of power by the Hashemite royal family in the very dynamic and contested politics of the country since 1921.

In these circumstances, Pragmatism, the underlying approach of the study becomes highly politicised. It is argued here that it is not the economic “useful aim” of Jordanian decision-makers to deploy farmland investments as a way to alleviate water scarcity through virtual water “imports”. Rather it is argued that what Dewey saw as the lynchpin of Pragmatism, “growth”, applied to a country like Jordan reveals the internal political struggle in Jordan associated with the challenging history of the Hashemite Kingdom. For Dewey, “growth” is the “method of intelligence”, which should not merely be understood as “expansion”. Pragmatic “growth” rather implies a reciprocal understanding of social expansion and the goods generated by these means (Kadlec 2007: 46). Pragmatic “growth” in a political economy such as Jordan describes a concept. In the Jordanian context, the decision-makers show a deep understanding of power transitions in society since the 1970s and 80s. “Growth” and thus the expansion of the range of choice to farmland investment in Sudan should rather be interpreted as as driven by “useful political aims”. Only when the domestic political economy and its social composition are included in the analysis, can the Jordanian interpretation of why virtual water “resources” represents growth can be fully grasped.

The increasing economic power of the Jordanians of Palestinian descent triggered the plans to expand the range of choice to farmland investment overseas. Thus for Jordan, the apparent pragmatic behaviour to expand Jordan’s policy choices to address food security has been determined by informal but very powerful networks of power that have been the socio-political by-product of the emergence of Jordan’s modern state.

Whether the political aim of investing in overseas farmland and related water resources is commercially and environmentally feasible will be answered in Chapter 8. The next

section will analyse the influence of the “shadow state” in a different country and context. Qatar’s political economy has not experienced the rich and tragic history of Jordan during the twentieth century. The next sections will also further test the hypothesis that the “shadow state” influences the range of choice, using evidence from Qatar. As mentioned in the introduction, the Qatari case is important because Qatar has been one of the most active investors in farmland across the world. It will be shown that in Qatar the expansion of the range of choice to include investment in overseas farmland and related water resources to achieve food and water security reflects one facet of the political tensions that characterise the “shadow state” of Qatar.

### **7.7. The political economy of Qatar**

The political economy of Qatar differs significantly from that of Jordan. As shown in the environmental background chapter, Qatar, due to its size, is an agricultural lightweight. Yet the political economy of agriculture is still influential with respect to what is considered to be relevant in the range of choice to address food and water security of the economy - albeit in a very different way from Jordan. Qatar is a newcomer to agriculture. There is a tendency to assume that because of its small size and relatively small population it could be possible to grow food domestically to achieve at least a measure of food security. The State of Qatar also has regional ambitions to engage actively in international trade in food to serve regional markets.

It will be shown that the domestic politics in Qatar are unique with respect to the analysis of the range of choice of policy options to address food and water security. The achievement of food security is subject to “shadow state” power disputes, which, as in Jordan, have their origins in the socio-economic history of the country. The recent drive

to raise the regional profile of Qatar is another important factor in explaining the discourse on measures to address the challenge of achieving food security. The networks of power that shape Qatar's alternative options will be analysed in this section. The history of Qatar's political economy will be provided first to illustrate the social history of the state in Qatar.

### **7.7.1 The history of Qatar's political economy**

Qatar has had no real international significance for several centuries. The Al-Thani ruling family have been in power since 1868 when Great Britain intervened politically to support the independence of Qatar from the Bahraini House of Khalifa. Bahrain controlled Qatar from 1783-1868. The British heavily influenced regional politics during the 19<sup>th</sup> century because the Persian Gulf was viewed by London to be strategically important in controlling the trade routes from India. Yet, Qatar was not a part of the Commonwealth because Britain only intended to control the trade routes to India, not the economies in the Gulf (Fromherz 2012; Hanieh 2011; Crystal 1990). Given London's main interest was to maintain peace in the region, the British imposed a settlement between the Al Khalifa tribe and the Al Thani tribe in 1868, which allowed Qatar a significant degree of independence from Bahrain. However, due to the Ottoman Empire's geostrategic interests in the region, Qatar, soon after the peace settlement, was forced to become part of the Ottoman Empire. Ottoman rule lasted from 1871 to 1916.

During the First World War and in another move towards greater independence from its colonising power, the Al-Thani tribe took part in the Great Arab Revolt to expel the Ottomans from the Arabian Peninsula. As a result of its small size, the pro-British Sheikh Abdullah bin Jassim Al Thani agreed to find political shelter as a British

protectorate. This arrangement lasted until 1971 when the Gulf State gained independence (Fromherz 2012; Crystal 1990). During the period between 1916 and 1971, Qatar enjoyed limited oil wealth, and being controlled by the British, was thus still not viewed as politically important. This situation changed, however, after 1971.

After independence, the Qatari economy has grown to become one of the richest per-capita economies in the world. The traditional source of income in Qatar had been pearl hunting, which provided only small returns to the inhabitants of the emirate. Although oil resources were discovered as early as the 1940s, the big development leap occurred from 1973 onwards, when oil prices increased to unprecedented levels. During the 1980s, Qatar was affected by declining global oil prices as were the oil-economies of the rest of the Arab peninsula causing almost a decade of economic stagnation. However, since the 1990s, the energy sector has been transformed through natural gas developments projects that have supplied gas to Europe and Japan. The roaring 1970s and the roaring 1990s enabled Qatar to transform its economy (Fromherz 2012; Crystal 1990).

The energy related developments induced an influx of over 1.5 million foreign professionals and workers. The small population of Qatar - the current indigenous population is only approximately 250,000 - required the ruling class to depend on foreign labour to maintain economic growth (Hanieh 2011; Fromherz 2012). Yet, the style of governance reveals the importance of powerful networks within the “shadow state” of Qatar, illustrated in the next section.



### **7.7.2. The informal networks of power in Qatar**

As in all Gulf States, the government of Qatar has kept tight control over the economy and no foreigner can set up a business without Qatari involvement. The size of the country and the long tradition of the House of Al-Thani have enabled the ruling class to control and manage the economy in a dirigiste, state-capitalist way where ownership is centralised and can be traced back to the House of Al-Thani (Hanieh 2011; Fromherz 2012).

Despite the small size of Qatar, its social composition is profoundly tribal. The Al-Thani ruling family has been the largest tribe since its establishment in 1825. Its political power has always been flanked by a small group of merchant families who demand their share of the country's economic assets. Until 1971, the ruling family did not have much to share with its political competitors, and hence the developmental leap had to be shared carefully after the 1970s to allow the participation of all of Qatar's economic stakeholders (Fromherz 2012). This need to take a careful approach to sharing power also explains why foreigners are very subordinate in political terms in Qatar and have no right to interfere in the economy. The Qatari tribes to which the House of Al-Thani has to relate have to be appeased, in order to gain a measure of political support for their rule.

The real nexus of power in Qatar is located in the inner circles of the royal family and its loyal merchant families, who fought with them against the Bahraini and Ottoman occupiers and accepted the political leadership of the House of Al-Thani (Fromherz 2012; Key-Informant #27 and 28). During the last century the number of native Qatari citizens was small. The native population has risen to an estimated 250,000 people by

2010. These are the citizens of the State of Qatar. However, only men matter in political terms. It is therefore important to note that the Al-Thani men only account for approximately 1500, while the allies the Al-Thanis who have to be appeased account for approximately 100,000 (Fromherz 2012). Although there are significant variations in the degree of political influence among the allied families, the Qatari decision-makers are highly dependent on their wellbeing.

Allegiance is not a political wild card; it has to be earned and deserved on an everyday basis. The Emir of Qatar governs his country like a Chief Executive Officer (CEO) (Fromherz 2012). He secures allegiance via financial handouts to Qatari citizens that involve “subsidies, state jobs, land grants, and free university education, the latter part of an effort to reinvest gas wealth in human capital, not just in shiny buildings” (Kinninmont 2013). The Emir, the Crown Prince and the Prime Minister, who are all Al-Thanis, oversee the \$300 billion assets of the country and decide upon the money flows both within and outside Qatar (Key-Informant #28).

Despite this rather hierarchical structure, the Emir is, in a sense, a first among equals, who doesn't exercise his rule in an authoritarian way but rather pays close attention to “asabiyya” (tribal solidarity). Although the royal family is at the centre of the power web in Qatar, it has been possible for other merchant families to gain access to the royal patronage through marriage (Fromherz 2012). For example, the second most-important family in Qatar is the Al-Attiyah family because the mother of the Emir is from this clan. It is important to note that the leading members of the government are also members of this family, which allows the family a unique position in Qatari tribal relations.

The continued political importance of the clan involves the sensitive treatment of society. As in other tribal states, the Al-Attiyah family was foremost a merchant family. The ascendancy to power of the current Emir came about after a bloodless coup supported by a leading member of the second family in the state against Emir Khalifa bin Hamad Al-Thani, and the subsequent enthronement of his son Hamad bin Khalifa Al-Thani in 1995. This outcome has caused jealousy among other merchant family tribes (Key-Informant #3, 28 and 37). In recent years, two members of the Al-Attiyah family were arrested by the Qatari authorities and subsequently imprisoned to send out a message to other tribes in Qatar (*Al Karama* 2010). The power of individuals of the Al-Attiyah family has not been without constraints because the Al-Thanis have to ensure allegiance of all tribes (Fromherz 2012).

The role of the Al-Attiyah family is highly significant because high profile jobs relating to food security and climate change have been allocated to members of this family. Climate change politics have been high on the Qatari agenda because the small Gulf economy was host of the COP18 meeting in December 2012. For Qatar, hosting the COP18 meeting was viewed with immense pride because it allowed the political leaders to gain access to the global political stage. Members of this family prepared and led the negotiations of the meeting. Parts of the Al-Attiyah family form what will be referred to as the environmental “shadow state” comprising of a young elite around the Crown Prince that has chosen the environment as a topic of concern. The next section shows the importance of this environmental “shadow state” in Qatari food security.

## **7.8. Food security in Qatar: perceptions and initiatives shaped by “shadow state” politics**

Agriculture, as mentioned in the environmental background chapter, is a negligible economic sector in Qatar. The very limited availability of water in Qatar has severely limited agricultural production. Food imports have therefore been the most important element of Qatar’s food security policies. In Qatar it is more appropriate to speak of food security achieved through trade instead of via a local agricultural sector. This pattern has a long history. For over a century, the British controlled the economy, which involved the import of food from India and the United Kingdom to serve the basic needs of this small and very poor society.

The handling of trade has traditionally been the task of the merchant families including especially the House of Al-Thani (Fromherz 2012). As mentioned above, the inner circle of the “shadow state” is composed of the royal Al-Thani family and a few important merchant families that extend allegiance to the Al-Thanis. Since the 1970s agricultural trade gradually increased to meet the food demands generated by to the influx of foreign labourers who rely totally on Qatar’s decision-makers to provide affordable food.

During fieldwork, officials in Qatar stressed the importance of the social composition of foreigners. A highly skilled and well-educated elite comprising Arabs and international experts from across the world work enjoy well-remunerated jobs in Qatar’s oil and gas business. In addition Asian workers provide other skills to implement Qatar’s ambitious development plans. The construction sector has been operating at a very high level for two decades reflecting the increased affluence of the country. Food prices have to be

affordable for the international expatriate community providing their skills to transform the infrastructure of Qatar (Key-Informant #1).

These economic activities only tell the official story of decision-makers in Qatar. Qatar has a number of options in providing food for its foreign workforce. One way would be to subsidise food imports by devoting some of the immense gas and oil rent Qatar to make food affordable. The other options have been illustrated in Chapter 2. Food security policy must not be determined by these obvious challenges and remedies. They have to be seen through the lens of the priorities and interests of Qatar's "shadow state" and the regional ambitions of its elite with its goal of influencing the politics of the Arab world. This very important issue will be discussed later in this chapter and in Chapter 8. The next section will also explain the complex web of Qatar's informal networks of power, the "shadow state", and how it has influenced the range of choice in the Gulf State. This material will provide the necessary analysis to answer research question 2.2., which relates to the role of the "shadow state" in the expansion plans of the range of choice to farmland investments.

#### **7.8.1. The role of the "shadow state" in food security**

So how is food security policy linked to the "shadow state" in Qatar? This section shows how the "shadow state" impacts the politics of food security in Qatar and thus the range of choice considered by the "shadow state" players in Qatar. The range of choice has two contending approaches in Qatar. The two approaches reflect the assumptions and interests of the two conflicting factions of Qatar's "shadow state". First, there is a domestic objective in one Qatari plan that aims to increase food security. Second, there is an international strategy to increase food security via overseas

investment and trade. Two different political camps in Qatar have been assigned responsibility for the two different strategies.

The above-mentioned environmental “shadow state” pursues the first strategy. It is gathered around the young Crown Prince Tamim. The second camp is composed of the foreign policy elite in the State of Qatar. It will be referred to as the foreign policy “shadow state”. This camp is gathered around the Prime Minister Hamad bin Jassim Al-Thani. Thus, the range of choice in Qatar does not only involve two strategies but also two conflicting camps that have associated themselves with one or the other political leader.

#### **7.8.2. The domestic food security option**

Due to Qatar’s dependence on food imports, the food price spikes in 2008/09 prompted the Crown Prince to establish the Qatar National Food Security Programme (QNSFP) to find solutions to the country’s growing food security concerns. As outlined in the environmental background chapter, the main trigger was not “the price of food in 2008/09 but the limited availability of food on the global market that wasn’t even sold to us (the Qataris) for an offered premium” (Key-Informant #1).

As a result, the QNSFP was endowed from the beginning of its operation, with a very large budget of approximately \$3 billion per annum to spend on food security policy measures and research. By 2014, the programme is supposed to establish a ten-year master plan on how to increase domestic agricultural production through investment in the local agricultural sector (QNSFP 2013). The cost of the expansion of domestic agriculture is estimated at \$50 billion over ten years (Key-Informant #1). As illustrated

in the environmental background chapter, the target of the programme is to grow 60 per cent of domestic food requirements by value in Qatar using advanced irrigation techniques.

However, a more ambitious strategy of the QNSFP seeks to provide the capacity to make technological and science inputs by investing several billions of US\$ over the coming decade in food security related education, research and development, industry and marketing (See Chapter 2). The domestic expansion of the range of choice therefore involves several costly steps to increase food security through local investment and legislation.

The QNSFP's political support is ensured through the Crown Prince Tamin Bin Hamad Al-Thani. The leadership of the QNSFP is in the hands of a member of second family in the state, who which enjoys close personal ties with the Crown Prince. This "shadow state" political alignment of the "environmentalists" is an important element in policy-making as it is seen to be means of implementing the required regulatory changes in the Qatari economy to increase food security in a new domestic food supply chain. The development of such a local supply chain requires that very innovative technologies be deployed. They have to produce unprecedented volumes of food commodities and at the same time remedy the damage done to local aquifers by over-pumping for irrigation in the past. The production of food on the Qatari peninsula also provides landholders with opportunities to profit from investments in agricultural land, which is owned by other influential families in Qatar.

Despite the QNSFP being in the environmental camp of the Crown Prince, the programme and its objectives have not remained without criticism from the other faction within the “shadow state”. The opposition is not a response to the proposed very high budget. Instead, the criticism stems from the altered scope of the QNSFP and related strategies. In 2012, QNSFP established the Global Drylands Alliance to form an alliance on food security with countries faced by similar adverse environmental conditions to grow food (Key-Informant #1).

The gradual expansion of the QNSFP’s scope, from being an exclusive programme for Qatar to an institution that would be the hub of a global network of countries in dry land areas faced by food security concerns, has become a political issue in Qatar. As a result, influential political voices in Qatar have become critical of the QNSFP (Key-Informant #26). This internal criticism will be further illustrated later in this chapter to show how “shadow state” manoeuvring determines outcomes. Prior to this, the second pillar in Qatar’s range of choice to provide food security will be presented.

### **7.8.3. The international food security option - a contentious policy landscape**

The QNSFP’s original task was to identify strategies and policies to increase food security via domestic agricultural investment. The other task identified by the Qatari decision-makers was first, investment in global food supply chains and secondly, in agricultural land, in Africa and other world regions. This last task was given to a company - Hassad Food - that was established as a subsidiary of the Qatar Investment Authority (QIA), which is a subsidiary of Qatar Holding where all the financial power of the emerging economy is located. Qatar Holding is one of the organisations



controlled and managed by the “shadow state” faction headed by the foreign policy faction within the “shadow state”.

Qatar Holding is chaired by the Prime Minister and Foreign Minister of Qatar, Hamad bin Jassim bin Jaber Al Thani. Qatar Holding has been controlled by a small number of individuals from a number of Qatari elites. They were selected from all the tribes in Qatar including the second family in the state. Given the foreign policy background of the Prime Minister, the head of Hassad Food is a member of this powerful family that has developed an ambitious foreign policy and has provided leading diplomats in the Qatari system. Hassad Food’s management is closely aligned with the Prime Minister Hamad bin Jassim and it is therefore interpreted by this study that Hassad is part of the foreign policy “shadow state” in Qatar (Key-Informant #27).

Hassad is the agricultural trading and investment arm of Qatar Investment Authority. The objective of Hassad is to invest in global agricultural markets for the Qatari state, differs substantially from that of the QNSFP. Its objective is to invest in companies all around the world that do business in the food supply chain. For this activity it has been provided with a budget of \$20 billion (Key-Informant #2). It is also the company that has been given the task of investing in global farmland, including in farmland in Sudan. Like the QNSFP, it is a newcomer to the field, having been established in 2008. The important issue with respect to this analysis is that it operates by the group close to the Prime Minister.

Until 2011, the different objectives of the two parties contending over food security policy in Qatar remained clear. The QNSFP was given the task of identifying ways to

expand the domestic agricultural sector, Hassad was charged to invest in global food supply chains. However, after 2011, the two companies became caught up in internal “shadow state” struggles that were invisible except to the “shadow state” players. The point being made here is that the range of choice on policies to bring about food security in Qatar has been the outcome of contentious factional “shadow state” politics. The contention has been over “turf” issues and over who could exert power rather than on a rational review of natural resources use and development of for example water or of the uncertainties of high-risk ventures such as farmland development in economies with poor infrastructures.

The most important aspect of this internal “shadow state” struggle is Qatar’s ambition to become a regional if not global political actor and to achieve its own food security in the process (QNSFP 2013). As in Jordan, the politics of the range of choice to achieve food security reveal tacit knowledge about the “shadow state” determinants of agricultural investment by Qatar in Sudan. The next section will further scrutinise the politics of the expansion of this range of choice in Qatar and how internal “shadow state” differences have influenced decision-making.

### **7.9. The politics of the range of choice in Qatar**

The Emir of Qatar manages power relations in Qatar like a CEO of a major company. Together with his senior management board, the Crown Prince and the Prime Minister, the Emir administers the funds of the State of Qatar, investing strategically in the economy and into Qatar’s social and cultural wellbeing. In practice in the decade up to July 2013, the Crown Prince and the Prime Minister fought for control of the affairs of the State of Qatar.

The 2008 global financial crisis revealed the critical importance of food security and the agricultural and trading policies on which food and water security depended. Both the Crown Prince and the Prime Minister noted that there were fortunes to be made in the politics of the range of policy-choices relating to food security. These internal “shadow state” struggles not only involved the two main political players in Qatar but also their allies. These alignments are very strong because of the financial ramifications of maintaining them. The Crown Prince and his camp have focused on food security and have been limited to investigating the agricultural potential of the natural resources of Qatar and of new technologies to produce food in Qatar. International investment, however, has been the responsibility of the Prime Minister and his camp, via the Qatar Investment Authority. Food security has proved to be an invisible “shadow state” battleground where the politics of the range of choice on food security have been played out.

As a result of the carving up of political space, the allies of the Crown Prince, namely representatives of the second family in the state, were given a leading role during the highly prestigious 18<sup>th</sup> Climate Change Conference of the Parties (COP18) meeting in Doha in December 2012. The conference series has assessed the progress of the United Nations Framework Convention on Climate Change on an annual basis. The Deputy Prime Minister of Qatar and one of his nephews (from the Al-Attiyah family) were the key Qatari representatives. They chaired the meeting attended by international ministers of state in charge of environmental affairs. These members of the second family in the State of Qatar are part of the camp around the Crown Prince whose influence stems from the leading female figure in Qatar, the wife of Emir Hamid, who “wants her boy to be the main man in Qatar” (Key-Informant #28). As will be shown in the following

sections, the range of choice is subject to “harem politics” - that is the intense competition between wives to promote the interests of their own children within the “shadow state” (Key-Informant #28).

In addition to the COP18 meeting in 2012, the Crown Prince’s camp also organised a high profile conference on “Food Security in the Drylands”. It took place in November 2012. In order to influence the range of choice on food security, QNSFP organised this meeting to confirm the formation of the Global Dry Land Alliance (GDLA). The GDLA is an alliance of countries with poor water resources that need similar new technologies and farming systems to those needed by Qatar to improve and secure sustainable agricultural production.

The GDLA specifically targets Middle Eastern countries such as Syria, Iraq and Egypt, where an increase in food production is seen as helpful for the Arab world, compared to global initiatives that compete with the experienced players in the global “food regime” (Key-Informant #1). In convening the event, the organisers sought out well-known international political figures to support the agenda of the GDLA. The mutual interests of prominent international figures such as the then US Secretary of State, Hillary Clinton, and the UN General Secretary, Ban Ki Moon were cultivated. However, Clinton and Moon eventually withdrew their initial acceptance of the invitation, which prompted the Crown Prince not to attend the meeting, despite earlier plans to address the audience. As this attempt to send a message to the other camp around the Prime Minister failed, the Crown Prince may have seen no value in getting personally involved in the conference.

At the same time, the foreign policy camp within Qatar's "shadow state" viewed the conference with great caution. This camp around the Prime Minister has been described as increasingly critical of the QNSFP's strategy, because it challenged his own portfolio, which handled international affairs and international investment (Key-Informant #3). His camp was challenged by the GDLA initiative because it touched upon interests of the Prime Minister's camp. The Prime Minister wanted to control the billions of US dollars that have been made available by the Emir for agriculture and food security after the food price spikes in 2008/09 (Key-Informant #3). Prime Minister's camp has been described as not only being interested in financial perks but in political influence, because his camp is also the driving force behind Qatar's recent military intervention, for example in Libya, and their financial support for opposition groups in Syria and for the Muslim Brotherhood Government in Cairo (Achcar 2013; Khatib 2013). Chapter 8 will shed further light on Qatar's international politics.

All these political initiatives serve his interests, increasing the sphere of influence of Qatar and of his own allies (Key-Informant #27 and 28). When the camp of the Crown Prince attempted to influence foreign policy through its plans to promote environmentally sustainable agricultural investment in Qatar and the MENA region, it trespassed on sensitive political ground due to Qatar's geopolitical ambitions, which will be further explained in Chapter 8. Thus, the internal "shadow state" politics of the range of choice to achieve food security in Qatar reveal how important and strategic the food security question in Qatar has become. It also sheds light on Qatar's Pragmatism.

#### **7.10. Qatar's Pragmatism and the range of choice on food and water security**

The rationale behind the agricultural and international investment strategies of Qatar is to increase domestic food security, and in addition provide neighbouring countries with food through the mega-port that is being constructed in Qatar. Water is the resource of concern within this rationale. Qatar's regional ambitions to control and influence the Middle East include consideration of its food security, via storage and trade infrastructures. The intent has been to trigger a regional political project to address the long evolved dismal and worsening water situation in the Middle East (Key-Informant #1 and 2). Virtual water "imports" have made it possible to provide the MENA region with a dependent version of water and food security (Allan 2011). More importantly, the virtual water version of food security and regional water security more generally would be a "useful project" for Qatar. It could raise the profile of Qatar's regional potential in a region shaken by revolutions and social unrest.

Responsible international inward investment in farmland, and thus in water - both the soil water in the soil profile and the local surface and groundwater attached to the land, could generate virtual water "flows" in to a region that has run out of water. The Prime Minister's strategy of investing in Sudan could generate the required virtual water "flows" that would enable Qatar to become food-secure through the virtual "basin" in Sudan. In addition, there has been the intent to serve Qatari interests by influencing the Arab world via regional and global food storage and trading strategy.

The theoretical expansion of the range of choice to achieve food security to include international farmland investments is a consequence of a pragmatic mind set to reflect Qatar's geopolitical ambitions to increase its sphere of influence in the Arab world

through the "import" of water embedded in food. The Qatari geopolitics of food will be explained in more detail in Chapter 8.

The environmental "shadow state", on the other hand, envisaged investment in a generic approach to sustainable agricultural water management that would put Qatar in a position of scientific and technical leadership rather than commercial leadership. As opposed to notion of controlling virtual water "flows" to the region, it would enable the countries in the Middle East to grow more food with less water through dryland agricultural practices. Control would therefore be on a different level – the technological and scientific level.

Both strategies aim at the same objective - to enable Qatar to become the leading economy in the Middle East and beyond. The aim was to control the region food security through food storage and trading systems as well as in investment in local agriculture and overseas farmland. The internal disputes within the "shadow state" have profoundly impacted the way the range of choice has played out. Competition for power and resources has led to disputes between the factions. The environmental "shadow state", and thus the QNSFP, has been forced to focus on food production and the science and technologies that could enable such production in the challenging Gulf environments. The realm of responsible inward investment in water and land overseas, involving massive investment sums, has been and remains within the sphere of those making foreign policy.

When the three men who govern the "Qatar Corporation" decided in 2007 to construct a new port, for approximately 7.5 billion US dollars, they agreed upon a shared political

objective to transform Qatar into a regional trade hub. This has the potential to utilise the geographical location of Qatar, as has been done by the main airline of the country (see Chapter 6). This objective is also far-reaching because it could increase the small Gulf economy's political leverage across the whole region. "Food has always been used in the Middle East to control people" (Key-Informant #6).

The two agents who could install the necessary intellectual, organisational and trading infrastructures - within the range of choice are first, the QNSFP, and secondly Hassad Food. As yet these two organisations are separate and do not cooperate. They are separately aligned and reflect the competing allocative politics of the Qatar "shadow state".

The outcomes of the "shadow state" games reflect the philosophical Pragmatism of the decision-makers. "Growth" from the experience in the Qatari case is first and foremost based on the perception of economic growth as illustrated in the theoretical framework chapter. Economic growth serves the interests of the state leaders to keep the small society together. Geopolitical ambitions intensify the role of Qatar's objective of increase economic growth strategically. However, this growth requires the support of important allies within the "shadow state". The largesse of the royal family and the crucial allegiance of several families within Qatar require the "shadow state" regime to ensure a broad strategy regarding who to involve in the strategic elements of Qatar's political-economy. The representatives of the second family in the state are very important allies of the family of the Emir. But it is not the only powerful stakeholder that the royal family must keep on side to ensure "assabiyya".



The expansion of the range of choice to farmland investments in Sudan therefore keeps in place a highly politicised contest, which significantly impacts decision-makers in Qatar. On the one hand, the “Qatar Corporation” seeks to grow economically; on the other hand, this growth must align with traditional tribal power relations within the ruling hierarchy. The Emir and the Prime Minister share a number of business interests. The Emir, Hamad bin Jassim bin Jaber Al-Thani, has been selected to represent a different strand of the Qatari “shadow state” after the coup in 1995. This outcome is the result of Hamad bin Jassim bin Jaber Al-Thani’s loyalty to the Emir, as well as to his drive and ambition. As a result of the “harem politics” in Qatar, the Crown Prince and his political allies have successfully challenged the Prime Minister’s position and as a consequence have influenced the policy choices made with respect to water and food security.

FDI in water and land and the global food supply chain was seen as the preferred option by the Prime Minister Hamad’s camp, because farmland investment could provide their allies with rent and political influence across the region. Alleged very high returns of 15-20 per cent annually were assumed and viewed as a key argument for FDI to entice a number of allies of the Prime Minister’s camp (Key-Informant #2). When the QNSFP and the Crown Prince Tamim’s camp started to launch the alternative GDLA, it interfered with the rent-seeking foreign policy plans of the informal “shadow state” power networks in Qatar.

These transactions suggest that in the Qatari “shadow state” disputes are underpinned by a pragmatic philosophical approach in which the “useful aims” such as virtual water “trade”, rent-seeking and the exertion of geopolitical influence are in the same box. For

both, the environmental and the foreign policy “shadow state”, the virtual water option exemplifies the “useful aims” element of the range of choice. However, while the environmental “shadow state” prefers to make use of “soft power” by increasing Qatar’s technological power in countries faced by similar hydrological conditions, the foreign policy “shadow state” seeks to make use of FDI to expand control over virtual water options such as in Sudan.

Since Qatari foreign policy has been in the hands of the Prime Minister Hamad’s camp, he is very ambitious on the issue of regional impact. Part of the ambition has been to establish a trade hub, which would also increase Qatar’s power through gaining a measure of control over food trade. The water-scarce Middle East as a whole is projected to face severe food security constraints in the coming decades. Qatar has sought to grasp what it views to be a region-wide opportunity. The range of choice in food and water management serves as one cockpit where the internal struggles of the “shadow state” have been played out in Qatar. All the noise around environmental politics and sustainable solutions for food security have served the interest of Crown Prince Tamim. His aim has been to push the Prime Minister to one side, in order to enable him to become the political leader in succession to his 61-year-old father.

The “useful aims” behind the range of the range of choice relating to food and water security have served the political interests of the young generation around the Crown Prince. These aims have enabled this “shadow state” faction to use food security as a high profile and very strategic project with which to strengthen their position within the regime. However, the Prime Minister and his camp have been able to obtain \$20 billion from the Emir to invest in farmland across the world, including in Sudan. This financial

muscle provided the Prime Minister with the financial means to entice other actors within the Qatari “shadow state”. The power implicit in this level of funding reduced the impact of ideas and initiatives of the Crown Prince. Hassad’s trading and investing operations, part of Prime Minister’s portfolio, served the interests of the foreign policy faction within the “shadow state” that was bracing itself for the struggle to succeed the Emir (Key-Informant #27).

### **7.11. Concluding remarks**

This chapter has analysed the expansion of the range of policy-choice with respect to food security in Jordan and Qatar. It has shown that farmland investment in Sudan is decisively influenced by domestic power structures, namely the particular “shadow state” politics of the respective economies. In both political economies, reasons for expanding the theoretical range of policy-choice in relation to food and water security has been determined by the power structures in respective economies.

In Jordan, farmland investments are used as a means to offer important allies of the “shadow state” an alternative to domestic water resources. In Qatar the range of choice reveals the internal struggles of the main factions within the regime to find ways to increase political leverage over this immensely rich but small in area Gulf economy. In both economies “shadow state” activities heavily influenced the decision to invest in farmland in Sudan. However, the political objectives of the two economies differ substantially according to their self-perceived strengths and options and capacities to influence. Jordan tried to use the overseas farmland option merely to silence contentious internal competition between the old Transjordanian elite families and the Palestinian newcomers that made their money in the private sector. Qatari decision-makers use the

option to invest in Abu Hamad in Sudan to further strengthen their position within the regime, and to cash in on the perceived political and economic opportunities of inward farmland investments.

The chapter has provided a deeper and novel understanding on “land grabbing” in contrast to the extensive conventional literature and analysis. The philosophical concept behind the range of choice concept – Pragmatism - allows the student of foreign direct investment in land to shed light on the deeper political structures and ambitions of farmland investment. The two highly politicised Middle Eastern societies - analysed in this study - both handle the issue of food security as an issue of political patronage of the Jordanian and Qatari “shadow states”.

The next chapter will analyse the situation in Sudan and to what extent the perceptions of the decision-makers are in accordance with the potential of the local natural resource endowments, with the capacities of the local institutional infrastructures and the risks of investing in uncertain inward investment ventures. The analysis will be a reality check involving a review of the limitations of the expansion of the theoretical range of policy-choice in relation to food and water security in relation to farmland investments in Sudan.

# **CHAPTER 8:**

## **THE LIMITATIONS OF THE JORDANIAN AND QATARI RANGE OF CHOICE**

## 8. THE LIMITATIONS OF THE JORDANIAN AND QATARI RANGE OF CHOICE

*“We had entered an era of limitlessness, or the illusion thereof, and this in itself is a sort of wonder. My grandfather lived a life of limits; both suffered and strictly observed, in a world of limits. I learned much of that world from him and others, and then I changed; I entered the world of labour-saving machines and of limitless cheap fossil fuel. It would take me years of reading, thought, and experience to learn again that in this world limits are not only inescapable but indispensable.”*

*Wendell Berry, Bringing it to the Table: Writings on Farming and Food*

### 8.1. Introduction

In the preceding chapters, the options available to Jordanian and Qatari decision-makers were discussed. The factors that influence the expansion of the two economies' range of choice to farmland investments in Sudan are decisively political. Through the analysis of the political motivations, the drivers of investment in Sudan were presented but the potential impacts on Sudan have not yet been discussed. This chapter will follow White's assertion that “it (the range of choice) is not infinite” (White 1968: 82). The range of choice is constrained by the costs of alternatives, institutional factors, cultural factors and the availability of natural resources (ibid). In addition, it is argued that the role of agricultural and water management skills deserves particular attention in an analysis of the range of choice.

Despite the perceived wide choice available to Jordanian and Qatari decision-makers to tap into the “virtual basin” in Sudan, these perceptions must be set against the evidence

“on the ground” in those areas where land has been leased by the two investing economies. This chapter will re-examine the factors that have been found to influence the theoretical range of choice and finally lead us to the practical range of choice - determined in many cases by the environmental conditions and the institutional capacities of Sudan.

The purpose of the chapter is to answer research question 3 and sub-question 3.1, regarding the limitations of the perceived opportunities to invest in Sudan. The first question relates to the constraints on the expansion of the range of choice to farmland investments through economic costs, agricultural skills and institutional and cultural factors, which pose the question:

- *What are the key limitations to expanding the range of choice to virtual water “flows” between East Africa and the Middle East?*

The hypothesis being tested is that *agricultural investments in economies such as Sudan also pose severe risks to investing economies, especially in the form of economic and political costs. Cultural factors that constrain the required high yields also prevail. Moreover, the global political economy of food has been subject to a shortage of skills in agriculture since the 1980s. Skilled labour for large-scale agricultural production is scarce across the world. Agricultural investment in the Sudan therefore embeds high opportunity costs that are often not taken into account by investors.*

Second, since this thesis argues that physical water scarcity is a key driver behind investment plans, the role of water in investment strategies will be highlighted to

discuss whether the perceived abundance of water resources in Sudan may also be a limitation of the range of choice. As with research question 3, the role of water management skills will be especially highlighted. Therefore, research sub-question 3.1 addresses the question

- *How has the range of choice of decision-makers been influenced by the concepts of “green” and “blue” water in evaluating and managing the water resources associated with recent investments in land in Africa?*

The hypothesis of sub-question 3.1 is that *water resources management in the targeted economies is the most crucial variable in the range of choice. The limited “blue” water resources in the Nile Basin mark severe challenges for investors who seek to expand their range of choice. The hydrological sensitivities are not taken into account by investors.*

This chapter is the outcome of extensive fieldwork in the Nile basin countries from August 2010 to May 2012. In order to present the limitations of the range of choice and answer research questions 3 and 3.1, the chapter will be structured as follows. First, the economic costs of Jordanian and Qatari investment will be presented to show the financial risks of FDI in Sudanese agriculture. Secondly, the institutional factors that provide the policy, legal and administrative framework for investment security will be illustrated. Thirdly, the role of agricultural skills in Sudan will be highlighted. Fourthly, the intrinsic cultural factors that shape the desired outcomes of virtual water “transfers” from Sudan to Jordan and Qatar will be presented. Finally, the second part of the chapter will address the role of water availability for increased food production in



Sudan to answer research question 3.1. The Pragmatism behind the water management question will show how the investment decisions impact the wider basin politics.

Pragmatism will be applied to interrogate the underlying perceptions of decision-makers on the opportunities in farmland investments in Sudan. However, the first factor that may limit the range of choice will be analysed in the next section.

## **8.2. Costs of FDI in Sudan**

The first potential limit identified to FDI in Sudanese agriculture is cost. In this section, the accounted costs for agricultural investment will be identified to show that financial risk is a limit to the expansion of the range of choice to farmland investment in Nahr an-Nil state. This will question Solow's assumption that the labour and technological progress are exogenously determined and grow at a constant rate (Solow 1956; McKay 2011: 142). It will also identify the costs and thus the risk of the right supply of technological inputs needed to turn currently "unused" agricultural land in Sudan into production. Although the land has been granted to Islamic investor countries by the Sudanese government without lease fees, there are a number of investment costs to consider. First, there are accounting costs. These are the costs of the actual investment to the investing economy or company. Conservative estimates of the initial investment cost per hectare for "blue" water irrigation schemes in presently unused land in the Republic of Sudan range from:

- \$10,000 for gravity-fed schemes irrigation ("blue" water) systems to
- \$15-20,000 for pumped irrigation systems ("blue" water) (Key-Informant #8, 34 and 35).

A gravity-fed irrigation system is an “elevated reservoir”, which uses gravity instead of pumps or power to produce water flow (Kendzierski 2013). As will be shown later in this chapter, both Ad-Damar and Abu Hamad are located in a climate zone with low rainfall patterns. Hence, although it is possible in theory to construct gravity-fed irrigation systems, they are not suitable for both investments. The more costly, pumped alternative, which would have to elevate irrigation water from the nearby River Nile to the Jordanian and Qatari allocated land, would be the better option. Pumped schemes consist of a pumping station next to the water source, a conveyance system that transports the water to the field, a distribution system that provides the application systems with water to irrigate the crops, and finally a drainage system for the excess water (Brouwer et al. 1985). In addition to the pumping scheme, the application is exercised through surface irrigation, sprinkler irrigation or drip irrigation (ibid).

The above-mentioned numbers include the costs of irrigation systems, land levelling, on-farm roads, drainage, investment in electricity generation, and farm equipment such as tractors, but exclude the costs of millage. However, in countries like Sudan, a “sensible operator of the farm project would stockpile spare parts” rather than relying on the local market, which may add an additional 30 per cent to the upfront investment costs. Thus, the costs to develop *all* allocated farmland for Jordan (200.000 hectares) would cost Jordan approximately US\$2.6 billion for gravity-fed schemes and US\$5.2 billion for a pumped scheme if the private sector were convinced to join Al-Bashayer as discussed in Chapter 7. For Qatar’s 100.000 hectares, the upfront investment costs would range from US\$1.3 billion (for a gravity-fed scheme) to a maximum of US\$2.6 billion (for a pumped scheme) respectively.

However, as mentioned above, in an environment like Abu Hamad or Ad-Damar, the pumped alternative appears to be the more feasible option. Thus, there may be no alternative to the pumped schemes with the associated higher costs for both investing countries. However, irrigation schemes also involve significant maintenance costs. These will be analysed in the next section.

### **8.3. Maintenance costs**

An important factor in irrigation agriculture is the maintenance of the pipes, drainage and farm machinery on which investors in other African countries spend US\$200,00 for gravity-fed irrigation schemes and US\$400,00 for pumped irrigation systems. The maintenance of pumps is significantly more expensive than maintaining water flowing downhill (Key-Informant #35). For Jordan and Qatar, the annual maintenance costs would range between US\$40/20 million and US\$80/40 million.

The life span of farm equipment in intensive agriculture is approximately five years. Thus, there are also the recurring costs of replacing farm equipment. A conservative estimate for the replacement of used farming machinery adds a cost of approximately US\$ 2,000 per hectare every five years. Hence investors from Jordan and Qatar would have to be prepared to invest an additional US\$ 400 million (Jordan) and US\$ 200 million (Qatar) every five years to purchase new farm equipment (Key-Informant #35). However, the above costs only cover the initial upfront investment costs for the expansion of the range of choice to farmland investments in Abu Hamad and Ad-Damar. Every project requires people to operate the farms. It is argued that the above costs are by nature high financially and risk limiting factors on farmland investments in Sudan. Hence, the high financial risk partly answers research question 3 about the limits

of the range of choice. However, physical farming infrastructure costs are not the only limits to the expansion plans of the range of choice. The next section will analyse the role of human capital show that finding skilled farmers pose a significant burden to the Jordanian and Qatari investors.

#### **8.4. Agricultural skills**

A very important factor that may limit the range of choice for Jordan and Qatar is the role of human capital, both in Sudan and globally. This section will refer to human capital in agriculture as agricultural skills to echo Nelson and Phelps (1966), Barro (1991), Benhabib and Spiegel (1994) that it should not be treated as an isolated factor in economic growth. The emphasis will be placed on skills because it will be shown that there is an absence of well-trained readily available agricultural expertise in Sudan. Although the local economy in Sudan provides an abundance of farmers, the vast majority are smallholders with experience of traditional farming. The above-mentioned costs of US\$5.2 for Jordan and US\$2.6 for Qatar may increase drastically if the investing economies seek to secure their food imports sustainably. Poorly trained staff poses a severe risk to investments. Investors in other countries have described their problems with the current levels of agricultural skills. Although not directly linked to Sudan, an American/Indian investor in Ethiopia expressed severe disillusionment with the availability of skills (Ramaswamy 2013).

*“Large-scale farming is like surgery. It is conceptually simple, but NOT easy. It is ONLY easy for someone who has been doing it for years” (ibid: 3).*

In the case of the American/Indian joint venture in Ethiopia, poorly trained staff caused low yields because the locally sourced farmers were not able to operate the farming machinery correctly. In a blunt description of conditions on the ground, the investor concluded:

*“A Formula 1 driver can drive a taxi like a Formula 1 Car, if necessary, but a taxi driver SHOULD NEVER BE given the keys to a Formula 1 Car.*

*Giving an unqualified operator, keys to a large horsepower, new John Deere tractor/planter (costing \$180,000) is like giving a taxi driver the key to a Formula 1 car” (ibid: 4).*

As Woertz (2012) notes, the agricultural investment of other Arab countries in Sudan is similarly subject to poor handling of farming equipment. Figure 8.1.below illustrate the inadequate use of farming equipment on a United Arab Emirates’ investment near Wad Rawah, approximately 100 kilometres south of Khartoum. The project that was launched in 2001 has quickly been run-down by locally hired farming staff. The irrigation methods used show an over-allocation of water on crops and poor implementation of the project.



**Figure 8.1. Images and map of a UAE agricultural project in Wad Rawah, Al Jazeera State (Google Maps; images courtesy of Eckart Woertz)**

This brings us to a deeper question relating to the reasons for the absence of agricultural skills across Sudan. The root causes of the skills gap are deeply located in the political-economic history of Sudan. The origins of this crisis can be traced back to the late 1970s when the government had to wrestle with high external debt (O'Brien 1985). It must be noted that the debt crisis was not an exclusive Sudanese phenomenon; it similarly affected countries across the African continent (Hoogvelt 1987; Koenig et al. 1998; Riddell 1992). As a consequence, agricultural sectors in developing countries such as Sudan experienced high levels of neglect. The reasons for this and also the effects will be explained in the next section.

#### **8.4.1. The consequences of structural adjustment programmes on farming expertise**

The neglect of agricultural development in developing countries like Sudan was the result of policy measures to cut the external debt. Under President Gafaar Nimeiri, Sudan's "breadbasket" dream (see Chapter 3) for agricultural development was financed by external debt, which was eventually unsustainable. As a consequence, the government called in the IMF in May 1979. The IMF advised taking drastic action and granted conditional loans in exchange for a Sudanese structural adjustment programme. In the Sudanese case, currency deflation, public expenditure cuts, an economic export focus and the removal of subsidies were prescribed by the IMF as economic recovery measures (Brown 1992; Daly and Holt 2011).

A consequence of complying with international advice was that the Nimeiri government largely lost control of economic policy in the early 1980s, and this was further intensified by an unwillingness to agree to this drastic action. In 1980/81, the value of imports coincided with an actual decline in exports, and hence the IMF "diet" failed. External debt rose to \$3 billion in the early 1980s after which the World Bank halted aid and the IMF made further emergency loans dependent on even stricter adoption of economic reform measures. Nimeiri's response was the announcement of an economic recovery programme, which devalued the currency, imposed higher tariffs on imports and cut food subsidies to zero. While the community of foreign creditors greeted his measures with temporary trust, the agricultural sector suffered from the structural adjustment programmes imposed by the IMF. Investment in the agricultural sector decreased to an all-time low. In addition, the devalued currency and high inflation destroyed the livelihoods of many farmers in Sudan (Holt and Daly 2011: 139-142).

The Sudanese case was no exception to the rule. Across the developing world, structural adjustment programmes led to a significant decreases in investment in agricultural sectors. Economies such as Sudan could not sustain the sudden removal of public agricultural expenditure. The liberal paradigm to turn countries like the Sudan into “liberal market economies” caused deep harm to global food security over the decades to come (Koenig et al. 1998: 1). In the 1980s, the World Bank and international donors were more concerned about the debt crisis, and hence investment in food security and agricultural development was reduced in real terms by 58 per cent in the period from 1984 to 2004 (Mueller 2009).

The 1980s and 1990s paradigm in international development was “the maintenance of agricultural systems” (Key-Informant #5). This development paradigm persisted until the early 2000s. The focus on keeping it in place led to a decrease in spending on agricultural training programmes. In addition, decreasing margins in agricultural production made farming less attractive for the younger generation. Development agencies channelled their funds into different sectors other than agriculture, and hence jobs in agricultural development were very scarce.

All of these measures combined had the effect of imposing a missing generation, both in Sudan and especially internationally, in agricultural development. As a result, agricultural experts who could manage and operate the mega-farms envisaged by Jordan and Qatar in Sudan are either experienced but old, or young and inexperienced. The market for agricultural experts is decisively small.



The supersizing of agriculture during the second “food regime” as shown in Chapter 6 to larger unit sizes also had an impact on human resources among farmers. While farms grew in size, demand for skilled farmers decreased in the Western world. The most likely candidates to manage farms of this size are, however, Westerners, who studied tropical agriculture in the 1960s and 1970s and have worked in developing countries for most of their careers. The other potential candidates are Brazilian and Australian farmers, who are experienced in large-scale agricultural production in conditions similar to the tropical or semi-arid zones of Sub-Saharan Africa. The international donor sponsored Africa-Brazil Marketplace has been created to reflect this skills gap and to promote partnerships between Brazilian farmers, institutions and policy-makers and Sub-Saharan counterparts (Africa-Brazil Marketplace 2013). This initiative alongside development cooperation is aimed at smallholder training to reflect the social strata of African agriculture, which provides lower yields than commercial agriculture. Sudanese farmers for example have very low yields per hectare for wheat with averaged 0.5 tons per hectare per season (World Bank 2013). Smallholder farmers produce lower yields than desired by investors to justify their costs. Training for farmers, however, adds further costs to agricultural investment projects. For example, an annual stipend for a smallholder farmer at Baraka Agricultural College in Kenya is approximately US\$ 2000 per farmer for a training period of 18 months (Cadoz et al. 2013). But, the skills taught at smallholder colleges do not prepare farmers to work on large-scale agricultural investment projects. They can serve in community food security projects. As a consequence, the training of agricultural students for large-scale projects would have to be carried out at internationally renowned universities, where three-year degrees can cost up to US\$ 100,000 (Key-Informant #8). If investors want to produce cheap food for

their domestic market, local farming skills are mandatory to keep the costs low in order to compete with the global commodity market prices of the corporate “food regime”.

Agricultural yields could also be at risk due to plant diseases. The next section illustrates that investors must factor in the potential risks that are a result of plant pathology.

#### **8.4.2. Plant pathology and agricultural skills**

Plant diseases can occur at any time during agricultural production. The worst outcome of a plant pest can be the loss of an entire harvest. Across Africa but especially in Sudan, there are only a small number of agricultural scientists who possess knowledge about new pests. Thus, any agricultural production must take this knowledge gap into account. Although the use of pesticides to counter plant diseases is very common, the risk on the investors’ side remains very high. The consultation fees for national, regional or international experts in cases of plant pests can be high, adding unforeseen risks and thus costs to the investment project (Key-Informant #8). Coping with the impacts of pest infections can be a determining limit on crop and livestock production in the regions selected for inward investment. Those investing in projects that have not taken the associated risks into account have incurred serious costs or have failed. For example, a British investment in the Kilombero region in southwest Tanzania has incurred unforeseen costs due to crop pests. The investment manager in London reported of significant added costs of production due to a plant pest that occurred in 2012. The investor was unable to find trained scientists in Tanzania that could provide advice on how to eliminate the rice pest. As a result of locally untrained scientists, he had to fly in trained staff from the United Kingdom to carry out a plant disease

treatment plan. The costs for this emergency operation were described by the investor to have added approximately GBP 50,000 (Key-Informant #8). This outcome suggests that the absence of trained staff in the target country can add significant costs for agricultural investors,

#### **8.4.3. The costs of agricultural experts for large-scale projects**

As stated by the American/Indian investor in Ethiopia the above quote, the role of proper farm management is a very significant factor in agricultural investment projects. A farm of the size of that cited has to be managed by an experienced General Farm Manager. The General Manager would need senior management to help him manage the 200,000 or 100,000 hectares. Among agricultural investors, it is agreed that the size of manageable projects should not exceed 10,000 hectares; hence the Jordanian project would have to be divided into 20 sub-projects and the Qatari project into 10 sub-projects. As a result a corporate structure would be required. The costs of farm management staff are considerably higher in Sudan than in other countries. The salaries of the corporate structure for a mega farm of 200,000 or 100,000 hectares would include:

- 1 General Manager with approximately a US\$500,000 salary per year before taxes.
- 20 (for Ad-Damar) or 10 (for Abu Hamad) Production Managers for each sub-project with salaries of approximately US\$ 300,000 per year
- 40 (for Ad-Damar) or twenty (for Abu Hamad) Irrigation Managers with salaries of US\$100,000 per year.

- 10 to 20 Research Managers for each project with US\$70,000 annual salaries. Their role would be to observe and research varieties, agronomy, and the potential of other cropping alternatives.
- 10 (for Ad-Damar) or 5 (for Abu Hamad) Processing Managers each with a salary of US\$60,000 per year (Key-Informant #8 and 35).

If the food is intended for export, another layer of bureaucracy would be added to the above estimated staff costs, which would increase the costs for human resources by an additional 30 per cent. In total, the Jordanian project would need to have a budget of US\$20 million and the Qatari a budget of at least US\$10 million per annum. However, the corporate structure of experienced farm managers is not readily available, either in the target economy or in the Arab world. In practice, farm managers who possess the skills to successfully manage a mega-farm usually have to be recruited by international headhunting companies based in London or New York (Key-Informant #8 and 35).

Although these costs may appear very high, the international and domestic political factors presented in Chapters 5 and 6, that drive the range of choice, explain why and how these sums may be available. In particular, projected returns of 20 per cent per year provide an additional reason for investors to inject capital into Sudanese agriculture. Nevertheless, the social environment in which the globally hired farm managers would have to work needs to be assessed as a further risk and thus a limiting factor to expanding the Jordanian and Qatari range of choice to farmland investment in Sudan.

The range of choice when expanded to include farmland investment is therefore decisively limited by the absence of qualified farming experts as a consequence of the

fatal consequences of the structural adjustment programmes in Sudan in the 1980s on the availability of human capital. The “missing generation” adds another layer of costly challenges to the option of investment in Sudan. Experienced farmers for large-scale projects would have to be hired from the global market, which decisively increases the costs for farming experts who can exercise “surgical” large-scale farming operations (Ramaswamy 2013).

This section concludes that agricultural skills are a significant limitation to the expansion of the range of choice, by adding further financial costs and thus financial risk to the planned investments. However, such projects could be in peril at any stage of implementation if the projects harm the social environment. The next section analyses the role of human health in relation to agricultural investments.

#### **8.4.4. Health factors**

Human health plays a decisive factor in agricultural production. International researchers have highlighted the linkage between agriculture and human health. Potential diseases that emerge from agricultural ecosystems include “zoonoses (diseases transmissible between animals and human beings); fungal toxins (mycotoxins) in crops and animal source foods; plant toxins; use of wastewater for agriculture; misuse of agricultural chemicals and antibiotics; occupational hazards of food value chains; contributions of agriculture to climate change and related impacts on disease; and, health impacts of agricultural alteration of ecosystems such as irrigation practices that promote malaria” (Grace and McDermott 2011).

Although River Nile state in Sudan is classified as hypo-endemic (low malaria transmission rates), a small risk of malaria persists (Noor et al. 2012). A more frequent

non-agricultural disease in River Nile state is debilitating river blindness.

Onchocerciasis (river blindness) is an eye and skin disease caused by a worm (filaria). It is transmitted to humans through the bite of a blackfly that breeds in rivers and streams. The worm migrates into the skin and into the eye causing blindness and disfiguring skin diseases. Although it can be treated with antibiotic medicine, the condition still affects local communities (WHO 2013). Although the treatment costs for river blindness may be marginal compared to the overall upfront investment costs, health factors should also be taken into as a potential risk for the Qatari project. An agricultural investment project such as the Hassad Food project in Abu Hamad must also hire medical staff to protect the workers from severe diseases.

Investors have repeatedly claimed that hospitals have been established in areas where land is leased. Both the Jordanian and Qatari investors stressed that they are providing free health care to local and international workers. Hence, the costs of health care have already been taken into account (Key-Informants #2 and 17). According to Western agricultural investors, the standard procedure for health care assistance is to hire nurses for farmland projects in order to keep the costs low (Key-Informants #8, 33, 34 and 35). Although it may be a minor financial factor in comparison, health care adds another layer of costs and to investors in Sudan. This brings us to another important factor - the socio-cultural layer - that may limit the range of choice.

## **8.5. Cultural factors limiting the range of choice**

Understanding the culture and political economy of rural communities in Sudan is pivotal in the analysis of the risk factors and thus the potential limitations of the expansion of the range of choice to farmland investments. The cultural limitations refer to the importance of the concept of “embedded autonomy” in governance models in developmental states such as Sudan (Johnson 1982; Evans 1995). Without the consent of the existing population, farming on a large-scale could face severe risks from the resistance of local populations to what may be perceived as outside intervention in their distinct cultures and livelihoods based on kinship (Ryle 2011; Greco 2013).

#### **8.5.1. Tribes of Nahr an-Nil state**

In order to illustrate “embedded autonomy” in the Sudanese context, the role of local tribes will be presented in this section. The existing population has a long and rich history. Nahr an-Nil state, like the rest of Sudan, is occupied by tribes whose history can be traced back to the sixteenth century. The Ja’ali group of tribes resides in Nahr an-Nil state. They claim to be descendants of al-Abbas, the uncle of the Prophet Mohammad. Within this tribal group, several smaller tribes have emerged, who speak fluent Arabic and consider themselves Arabs. The Ja’ali group of tribes occupies both banks of the Nile. The Manasir and Rubatab tribes dwell semi-nomadically on the land around the great bend of the Nile, around the Abu Hamad region. The area around Ad-Damar is inhabited by the Mirafab tribe (Holt and Daly 2011: 3-4).

The origins of the tribes that dwell in the area of investment are important because the post-colonial Sudanese governments, since 1956, have treated the tribes of Sudan very differently. The Ja’ali group of tribes has a reputation as being major beneficiaries of both post-colonial rule and post-independence politics. They are regarded as being part

of Sudan's riverain elites and are important providers of bureaucrats for the government administration and Sudan's education systems (Personal Communication with Harry Verhoeven; Personal Communication with Saleh Eissah; Key-Informant #24). Hence, the land allocation in Sudan in Nahr an-Nil state directly benefits the bureaucratic elites in Khartoum. Although it may appear to be an economically conceived move to attract investment in the region where the government elites originate, the social structure is more diverse.

Although some of the Ja'ali tribe members are settled and part of the government elite, a sizeable proportion of the tribes still pursue nomadic, pastoralist farming livelihoods. Pastoralist farming practices have distinct features that distinguish them from farming practices in other regions across the world where agricultural production takes place. Before this study returns to the role of tribal affiliations, the next section will elaborate on the role of the farming practices of the pastoralist Ja'ali tribe members.

### **8.5.2. Pastoralism in Sudan**

A distinct cultural factor in Sudanese agriculture is that an estimated 80 to 90 per cent of the Sudanese population own livestock (Fahey 2008). While the majority of the population keep livestock for household food security purposes in settled conditions, a significant number of Sudanese farmers are nomads. This highly mobile form of farming is called pastoralism, which is an economic and social system in agriculture, where nomadic farmers raise livestock for tribal or family food security.

Since pastoralism is a culture that dates back thousands of years, administrative boundaries are meaningless to these herders. Pastoralist farmers are mostly found in



areas with low rainfall, where other forms of “settled” cropping are unsuitable in the prevailing ecosystem. Pastoralists’ livelihoods depend on their intimate knowledge of the ecosystem, which qualifies them as the “best custodians of drylands environments” (Suliman 2013; Rota 2009; Behnke 2012; UNEP 2013). There are no reliable numbers regarding the size of the pastoralist communities in Sudan. However, a very rough estimate by the government and international institutions suggests that there are approximately 90 to 130 million cattle in Sudan (Fahey 2008). Estimates of the number of pastoralist farmers amongst the Ja’ali group of tribes are not available because the vast geography of Sudan makes it impossible to count the people involved.

### **8.5.3. The political economy of pastoralism in Sudan**

A key feature of pastoralism is the organisation of the people involved. The basis for pastoralist institutional formation is the tribe (kinship), which is a set of patrilineal related households traced (in theory) to an apical (dominant) ancestor (FAO 2013). In some cases, the family history may date back only a short time. However, there are cases where the working kin group is a lineage of a clan that has existed for several centuries.

Such long family history and traditions provide these pastoralists with strong legitimacy with respect to their use of land and water to raise livestock in the tracts in which they live. As mentioned above, administrative boundaries do not play a major role in the way of life of pastoralists. Another feature of the pastoralists’ way of life is a male-dominated culture. For example, among the Boran of southern Ethiopia, men born within a seven-year time span are part of a named age-set that provides rights and privileges within society as well as acting as a powerful force in establishing and

maintaining social cohesion and a system based on the local seasonal calendar (Legesse 1982).

Pastoralists have a strong socio-cultural fabric that has evolved over centuries. There are three major pillars for the economic wellbeing of pastoralists: 1) Natural resources - water and pasture in drylands. 2) People - family and institutions; and 3) Assets - livestock. Nomadic pastoralists move without a specific pattern - but when they are not constrained - always moving to where there are natural resources. This pattern varies from year to year according to the availability of rainfall and the pasture resulting from variations in local rainfall. Entire families move around in opportunistic patterns with their livestock to earn a living (UNEP 2013).

The seasonal migration routes can range from 50km to 300km in length depending on the availability of resources for their animals. The livestock raised are traded, not only for women, and meat and dairy products are also traded for other economic goods such as food, clothes and guns (Behnke 2012; Blench 2001). Pastoralist farmers contribute around 25 per cent of the dairy and meat supply to the Sudanese economy, and hence have an important economic role. However, given their movements, they can, and have, interfered with projects where the intention of an investment project is to produce on large tracts of land in other Sudanese states than Nahr an-Nil (Key-Informants #23, 24, 25). The next section shows that culture in Sudan is deeply intertwined with the political economy of pastoralists.

The history of pastoralist subsistence farmers is almost as old as the territory of the Republic of Sudan. Pastoralists are part of a certain kin or tribe, who have moved

around Sudan for centuries. Nahr an-Nil state is of particular interest because it has been the focal point of traditional trade routes from Egypt to Ethiopia. Abu Hamad and Ad-Damar have a history of being trade centres for pastoralists and merchants, who travelled the Blue Nile upstream and downstream from the source of the Blue Nile in Bahir Dar to Cairo via Khartoum and Omdurman (Daly and Holt 2011). As illustrated above, Nahr an-Nil state has historically been inhabited by the Ja'ali group of tribes, who were given control of the area during the reign of the Mahdists and are important suppliers of the current bureaucratic elites in Khartoum.

As a consequence of the culture and history of pastoralists they have no experience with administrative boundaries, only with tribal affiliations. As a result, the relationship between the pastoralists and the State is ambiguous. Even though it has often been predicted by agricultural analysts that pastoralists will not stand a chance in the face of the modernisation of agricultural policy, the widely predicted total demise of pastoralists has not happened (Blench 2001: 6).

Applied to the expansion of the range of choice of Jordan and Qatar to farmland investment in Sudan, local pastoralists in Nahr an-Nil State comprise some of the families that have populated the bureaucratic elites in Khartoum since the independence of Sudan. The tribal kin in Khartoum can therefore determine options for families in Nahr an-Nil. They can if necessary influence whether the two projects examined in this study be implemented as planned. Pastoralist farmers can be controlled. The outcome of the “embedded autonomy” in Nahr an-Nil state is that Jordanian and Qatari investors enjoy good relationships with the local community (Key-Informant #2 and 17).

Pastoralist farming also has a legal dimension. The role of pastoralists in East Africa has been subject to numerous debates about legal arrangements, which are a core issue in relation to the limitation on the expansion of the range of choice to Sudanese farmland investments. These debates centre on the issues of governance and land tenure, which will be illustrated in the next section.

#### **8.5.4. Governance in Sudan**

The previous sections have shown the high costs of investments in land, which are further increased by the absence of local and international agronomic and farming skills and knowledge in Sudan. Cultural factors that stem from the indigenous farming communities, including the pastoralists, add further risks to investments.

In addition, one of the most central issues for resolving the potential problems between investors and local communities is the role of an effective land policy and thus governance. Currently, unified legal frameworks for land tenure do not exist across Sudan. The land question in Sudan reflects Sudan's history. After Mohammad Ali Pasha conquered Sudan in 1821 land titles were gradually centralised by Hakimadar (the governor general) in Khartoum. The uprising against the Egyptians under Muhammad Ahmad in the early 1880s led to the establishment of the Islamist Mahdiyya rule ("the rightly guided one") in 1885. The Mahdiyya owned all of the land and redistributed it to the tribes of Sudan through title deeds. As a result, the landowners were close to senior Mahdist military leaders, who were then defeated by the British under Kitchener in the subsequent military interventions from 1895 to 1898 (Holt and Daly 2011).

After the British seized control of Sudan and introduced an Anglo-Egyptian Condominium from 1899 to 1956, new land laws were introduced that assumed that land was owned by the Government until it was proven otherwise (Pantuliano 2007: 3). The rationale behind the British colonisers' policy was to co-opt sectarian leaders, who were willing to accept British rule. Illiterate landholders were disadvantaged because they often could not prove their ownership of land. As a result of the British rule in Sudan, land was nationalised to increase the political leverage of the newly independent central government (Holt and Daly 2011).

The British land policy remained in place even after Sudan's independence in 1956. In fact, the principle of public ownership was further strengthened during the 1970s and 1980s by Nimeiri's Government in Khartoum. However, the land law was politically motivated. Nationalised land was allocated to political agents who were close to the government who "grabbed" the land on behalf of vested interests (Pantuliano 2007). Under Nimeiri, land was even appropriated by the State by force, to encourage industrial agricultural development as presented in Chapter 3.

After the coup d'état staged by Omar Al Bashir in 1989, no major changes to land tenure were initiated by the Islamic government that has been in power since that date. Governance in Sudan is widely recognised as weak with a dominant centre and a neglected periphery (De Waal 2007). Institutions or the "rules of the game" (North 2005) for farmland investments and the legal security of new and existing farmers exist only on paper. Although agricultural investment policy and land tenure has been delegated to Sudan's 17 state governors, such as in Nahr an-Nil state, central Government has allocated the land. The tenet of the Islamist Government and the ruling

National Congress Party has been greater federalism, which is a political process that contradicts farmland investment (Key-Informants #22, 23 and 25).

This contradictory system has left official governance weak due to legal conflicts between the institutions that attempt to enforce the law. On the one hand the central Government provides investors with large swaths of land for investment but on the other hand the regional authorities have been given the task of enforcing the tenure of local farmers. As a result of the tribal affiliations, this conflict has not led to institutional conflicts between the central and regional governments. As explained, kinship and family connections between those who allocate the land in Khartoum and those who enforce the law in the countryside are strong, and hence the social dimension poses a less significant risk to the range of choice. However, this chapter will return to the role of local populations when discussing the environmental limitations of the range of choice.

The wider social factors do not greatly limit the expansion of the range of choice to tap the “virtual basin” in Nahr an-Nil state due to tribal affiliations. In contrast to the literature on “land grabbing” in Africa that strongly emphasises the negative effects of agricultural investment on local rural populations, the situation in Nahr an-Nil differs due to the prominent role of the Ja’ali tribes in the central Government bureaucracy. Jordanian and Qatari investors understand the favourable conditions of the tribal affiliations and thus “embedded autonomy” in Sudan, and hence they do not view the social factors as a major risk (Key-Informant #2, 17 and 18).

As a result, in contrast to the literature that reiterates the role of governance as being a

major burden for farmland investments, the specific social relations in Nahr an-Nil State suggest that this condition is not a limitation on the expansion of the range of choice to the “virtual basin” in Sudan. Investors from Jordan and Qatar have shown an awareness of the potential conflict arising from the poor governance structures in Sudan, yet they have pointed at the informal governance of the land in Sudan, which is assured through the kinship of those who lease the land in Khartoum and those who own it in the Nahr an-Nil region. These two interests are often from the same kin, and hence the governance of land resources in Sudan must be viewed through a different, “embedded autonomy” context. This control of local farmers by tribal kin in Khartoum is a Sudanese interpretation of “embedded autonomy” where the government bureaucrats enjoy close ties with affected populations of agricultural investment. This partly answers research question 3, that governance is not a major limitation for the expansion of the range of choice to would be investors in Sudan. However, there are other factors that add further risk to the expansion of the range of choice for Jordanian and Qatari investors in land and water in Sudan. The next section explains the role of energy in relation to agricultural investments. The final economic risk for agricultural investors stems from the availability of energy as it will be illustrated in the next section.

## **8.6. Energy**

In order to operate farms on the scale of the Jordanian and Qatari projects, a reliable and inexpensive energy supply must be ensured to guarantee agricultural production. For example, an agricultural project requires electricity and fuel to operate the machinery. In remote areas such as in Nahr an-Nil state, energy can often be a major issue for investors. For example, the Qatari project in Abu Hamad was exposed to electricity shortages because the local government did not provide the electricity power supply

lines that had been agreed (Key-Informant #2). The unavailability of electricity prompted Hassad Food to halt its investment in Abu Hamad. However, in June 2013, the Hassad executive board attended an inauguration of a new power supply line to its project in Abu Hamad (*Gulf Times* 2013). In addition to electricity, fuel must be stored and made available at all times. Investors from Jordan reported that volatile diesel prices in Sudan at times posed severe constraints to the commercial feasibility of the project in Ad-Damar.

During the year 2010, shipments from Ad-Damar to Port Sudan were double the costs that of the previous year (Key-Informant #17). However, the project still continued albeit on a small scale. Electricity and fuel therefore pose additional risk factors to the two agricultural investment projects. However, all of the above-described risks can be solved through financial risk taking. If both Jordan and Qatar can decrease their dependency on the global “food regime” and appease the domestic shadow state, the underlying political Pragmatism to “grow from experience” may prompt both countries to accept the higher financial risks to liberate themselves from the global agricultural superstructure and at the same time provide rent to local cronies.

### **8.7. Risk mitigation**

Governments or private sector companies could underwrite the high upfront investment costs. The absence of agricultural skills could be solved through appointing a corporate structure composed of international experts who possess the required knowledge on farming, plant pathology and human health. The dire consequences of past structural adjustment programmes could be alleviated through skills initiatives by investors and investment in farmers’ education. The semi-nomadic tribal composition of Nahr an-Nil



state could be addressed through alternatives to tribal connections between the Khartoum elites and the pastoralist nomadic farmers of the indigenous tribes of the Manasir, Rubatab and Mirafab. The central government in Khartoum could also be forced to agree to legal security and to provide electricity to the projects. Fuel could be stored in large facilities to strategically address the volatile prices in Sudan. All of the above costs limit the expansion of the range of choice of investors to tap into the “virtual water basin” in Sudan. However, they could all be overcome with spending from deep private and public sector funds.

Hence, in answer to research question 3, the chapter concludes that the key limitations listed above pose severe constraints to the commercial feasibility of the Jordanian and Qatari projects, which could, however, be overcome through a willingness to take financial risks.

Commercially, the projects are unsustainable, as a Key-Informant from an Egyptian private sector fund investing in Sub-Sahara Africa pointed out, unless the food produced is sold to the domestic market. Investors must be “nuts” to assume that food can be commercially exported from farms in Sudan to countries like Jordan and Qatar (Key-Informant #20). All of the above risks separately and especially in combination make the existing and proposed investments unviable. Only if the food produced remains in Sudan, can investors experience returns on their investments. These could reach 20 per cent per annum (Key-Informant #20). However, Nahr an-Nil state is not classified as “food-insecure” in Sudan (Famine Early Warning Systems Network 2013). In contrast to Darfur, South Sudan and the Eastern regions around Port Sudan, Nahr an-Nil has a history of stable yields of perennial crops such as alfalfa (lucerne) and annual

crops such as wheat. The population in Nahr an-Nil has therefore not been exposed to immediate food insecurity, and hence local demand may be lower than in other Sudanese States affected by immediate food security. This suggests that commercial returns induced by local demand may, therefore, be lower in comparison to other States, where demand is high.

What do the limitations tell us about the Jordanian and Qatari policy options in relation to investing in crop and livestock production into the “virtual basin”? This takes us to a brief discussion to answer research question 3, of how the economic and social factors in Sudan influence the practical range of choice of Jordan and Qatar, which will be presented in the next sections.

#### **8.7.1. The practical range of choice of Jordan**

The practical range of choice experienced limitations when the evidence on limitations is brought into the analysis. As shown in Chapter 6, the private sector companies in Jordan that were invited by the government to join Al-Bashayer in exchange for the land in Disi decided to abstain from investing due to the commercial risks and the absence of Jordanian government subsidies (Key-Informant #13 and 15). The Jordanian government’s unwillingness to provide subsidies to the private sector companies for investment in Sudan suggests that Jordanian Pragmatism reached its limits when the risk factors were taken into account. Addressing the high-risk issue of water security in Jordan was not regarded as the primary concern of the private sector. The “useful aims” of the private sector are of a very different nature than the State’s political Pragmatism in echoing the sociological determinants of the political economy of Jordan. The land offered was half-heartedly given to companies that comprised shadow state cronies of

the King because the government lacked the financial resources to underwrite the huge costs of agricultural development in Sudan, which would have consumed a sixth of the annual GDP.

This outcome suggests that the “virtual basin” alternative in Jordan has not been regarded as having the potential to mitigate national food and water insecurity. It also suggests that the King did not want to further strengthen the powerful families on which his monarchy is based. The Jordanian agricultural journey in Sudan ended when the private sector - mainly operated by Palestinian families was asked to take on the costs and the associated risks. However, the public sector has continued to invest, albeit on a much smaller scale due to limited funds.

As shown in Chapter 7, the public sector is populated by East Bank elites. In the Sudanese case, it is an arm of the Jordanian army that invested. Despite the financial risk, the military company still produces food in Ad-Damar in order to keep Jordanian food prices low to avoid further private sector gains in agricultural trade. However, this small project in Sudan is on the verge of becoming a commercial failure. Key-  
Informants in Jordan stressed that the returns in Sudan hardly match the costs (Key-  
Informants #11, 13, 15 and 17). The downsized project remains a political project. The farming activities are too small to have a major detrimental impact on the local population. However, as mentioned above, Jordan is a small economy and a small potential investor compared to Qatar. In Qatar, the expansion plans of the range of choice to farmland investments are underpinned with \$20 billion; hence Hassad Food possesses wider options and a wider range of choice than Jordan. The next section discusses the practical range of choice in Qatar.

### **8.7.2. The practical range of choice in Qatar**

As opposed to Jordan, Qatar appears to be more willing to take financial risks because the investment costs are underwritten by the state. In Qatar, the financial risk of the investment to expand the range of choice is not viewed as a major burden. The perceived returns of 20 per cent per annum drive the investment. However, as mentioned above, the risks still outweigh the commercial opportunities. Past investment by Gulf economies has shown the difficulties associated with FDI in Sudanese agriculture. This outcome questions Qatar's Pragmatism. Despite the commercial risks, the Qatari project seeks to become operational by 2015. As shown in Chapters 6 and 7, the international and domestic political pressures that influence the plans to invest in Abu Hamad may be perceived as strong enough to be financially feasible. Hence, the "useful aims" in the pragmatic sense may be independence from the global "food regime" and ensuring the political patronage of the Qatari "shadow state".

In addressing research question 3, Qatar has shown to have been similarly affected by the multitude of limitations to expanding the range of choice to Sudanese farmland. However, in contrast to the financially weaker Jordanian state, the Qatari state is prepared to take on the predominantly financial risks posed by the limitations of the expansion plans.

The chapter will return to this question at a later stage when research question 3.1 will be answered through the lens of Pragmatism. The transformation of the desired subject matter in the pragmatic sense is the flow of "virtual water" from Sudan to Qatar to alleviate food and water insecurity. The next section shows that the desired outcomes have been impacted by water management options, which affect a wider area than Abu

Hamad. It will be shown that if the availability of water resources in Sudan is brought into the analysis, another aspect of the Pragmatism that drives the range of choice in Qatar will become obvious.

The economic factors are not the only risks that investors from Jordan and Qatar are facing. The environmental factors must also be introduced to understand the full impacts on both projects of environmental conditions and especially the role of both “green” and “blue” water resources Al Bashayer and Hassad both have to engage with Nature to grow food in the “virtual water basin” of Sudan for the domestic market in Jordan and Qatar.

The next section analyses the role of the environment and in particular the role of water resources in Sudan. This review will provide evidence of the low level of understanding on the part of investors regarding the potential of Sudanese water resources. The analysis will address research question 3.1, to examine the environmental limitations of the expansion of the range of choice to farmland investment in Sudan.

## **8.8. The environment in Sudan**

As Chapters 2, 3, 6 and 7 have shown, Jordanian and Qatari decision-makers perceive that food production in Sudan can make use of some of the water resources in this East African country. The water used for food production can then be “imported” in “virtual” form to make strategically important “imports” of water embedded in food due to mitigate the absence of water resources in Jordan and Qatar for domestic agricultural production. However, Chapter 2 has shown that the environment in Sudan may be at risk if investors do not understand the full environmental impact of their projects.

The environment in Sudan is, as many places in the world, subject to severe challenges such as climatic variability and change. However, the environmental situation in Sudan has wider implications such as the potential social impact on the livelihoods of the local populations as mentioned above. Since the intended virtual water “flows” have been the subject of this study, the impact upon water resources of the two farmland investment initiatives described in Chapters 2, 7 and in this chapter needs to be analysed.

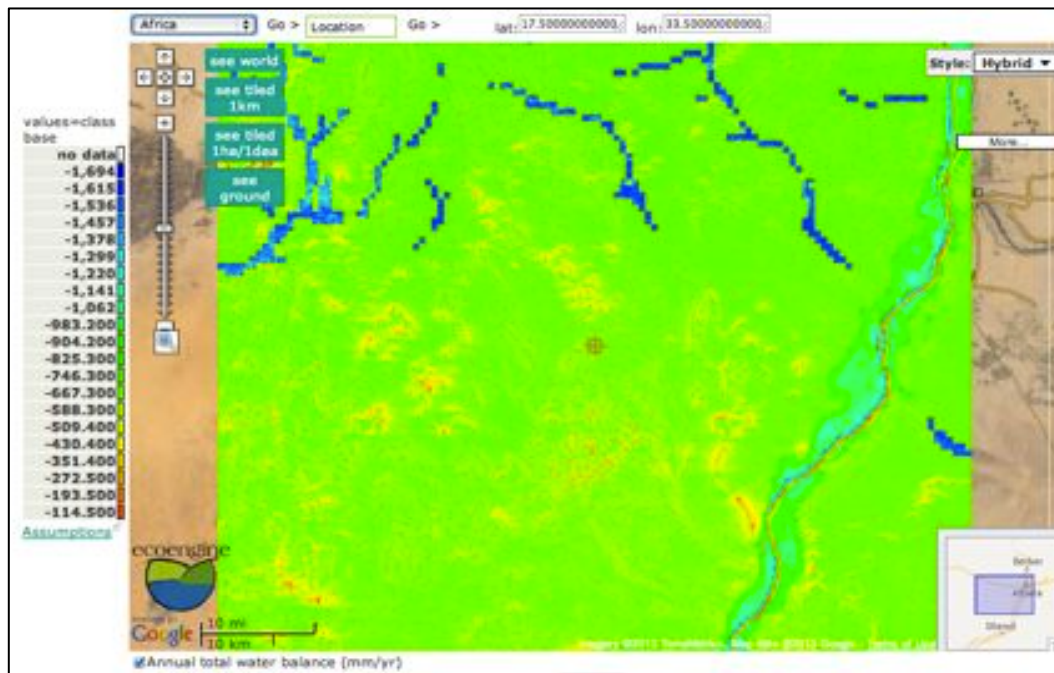
According to hydrological modelling for most of Africa - with the exception of the Congo basin, it can be expected that a 1 per cent vegetation cover increase would decrease the water balance (rainfall minus actual evapo-transpiration) by 1 per cent (Mulligan 2013a). At the same time this change would result in a loss of the availability of “blue” water for the local community and downstream users. These conditions beg the question of whether the hypothesis that investors can better ensure sustainability of their projects through a particular understanding of the hydrological sensitivities can be verified. The next sections will analyse how the environment informs the Pragmatism of the Jordanian and Qatari investors and whether they have learned from the past failed investments in Sudanese farmland in the 1970s and 1980s as illustrated in Chapter 3.

#### **8.8.1. Jordanian investment in Ad-Damar**

As mentioned above, the Jordanian investment has not reached its full planned implementation. Only 5000 hectares of the allocated land in Ad-Damar have been made operational. The impacts on Ad-Damar are therefore small in extent. Investors in Jordan stressed that they are using water from the bend of the Atbara tributary to the Nile to irrigate their plot with “blue” water. Although no data were available from the investors

on the exact quantity of water, the water diverted from surface flows is said to be minimal. It must also be stressed that a small amount of precipitation occurs during the wettest season in August and September, which is on average 4-6 mm during those two months. The data from WaterWorld, a global hydrological model coupled with details spatial database (Mulligan 2013b), indicates that the resulting water balance (rainfall minus actual evapo-transpiration) of the project has little impact on water availability for the surrounding area due to the small size of the project (see Figures 8.2. and 8.3.).

Figure 8.2 provides the water balance prior to the intervention through the irrigated farmland plot. Figure 8.3 shows the levels of water use after the land use change for the implementation of the 5000 hectares of farmland for wheat and lucerne (alfalfa) production. These data illustrate that despite the internal Jordanian disputes over it, the project's implementation has led to little environmental effect on Ad-Damar and the surrounding area (See Figure 8.2. and 8.3.). The water "gap" of this project between the available water balance (0.9 to 1.7 mm/year) and the additional requirements of water for this project (up to 4.29 mm/year in excess to the local water balance) is not greatly affecting the Ad-Damar region. Nor does the project have any wider basin impacts. However, in contrast to the Jordanian project, the Qatari project tells a very different story in terms of environmental impact.



**Figure 8.2. Annual Total Water Balance in Ad-Damar/units in mm/year  
(WaterWorld 2013)**



**Figure 8.3. Change in Water Balance in Ad-Damar due to proposed 5000 ha  
project/units in mm/year (WaterWorld 2013)**



### **8.8.2. Qatari investment in Abu Hamad**

As mentioned above, the Qatari project is intended to be twenty times the size of the Jordanian project. In areas such as Abu Hamad where a significant increase of vegetation cover is planned by investors, the consequences for local downstream users would be very significant. The intended estimated diversion of 1 billion cubic metres (Key-Informant #2 and 25) of Nile water suggests that for the Qatari project this would translate into vegetation cover increase of over 50% in the Abu Hamad area. Data from the WaterWorld model in Figure 8.4. first shows the water balance prior to the planned land use change.

Figure 8.5. shows the impact of the project on the water balance in the Abu Hamad area. The large blue dots reveal that the project would make use of up to 441.9 mm/year of water resources in this area. This impact would “wipe out” (sic) the water balance completely in the project area. Figure 8.4 shows the Abu Hamad region has a water balance ranging from 0.9 to 1.74 mm/year. The water “gap” to irrigate the intended crops would have to be sourced from surface water such as the Nile, hence the project would also have additional wider basin impacts (Mulligan 2013a: 403)

Low rainfall of 4mm in August and September would make the use of “blue water” inevitable on the Hassad Food project. WaterWorld data indicates that the project in Abu Hamad poses severe risks not only to the project area but also to downstream populations. Increased virtual water “flows” in the food produced on the Qatari project in Sudan would thus be a major intervention in the lower Nile Basin, which is analysed in the following sections.

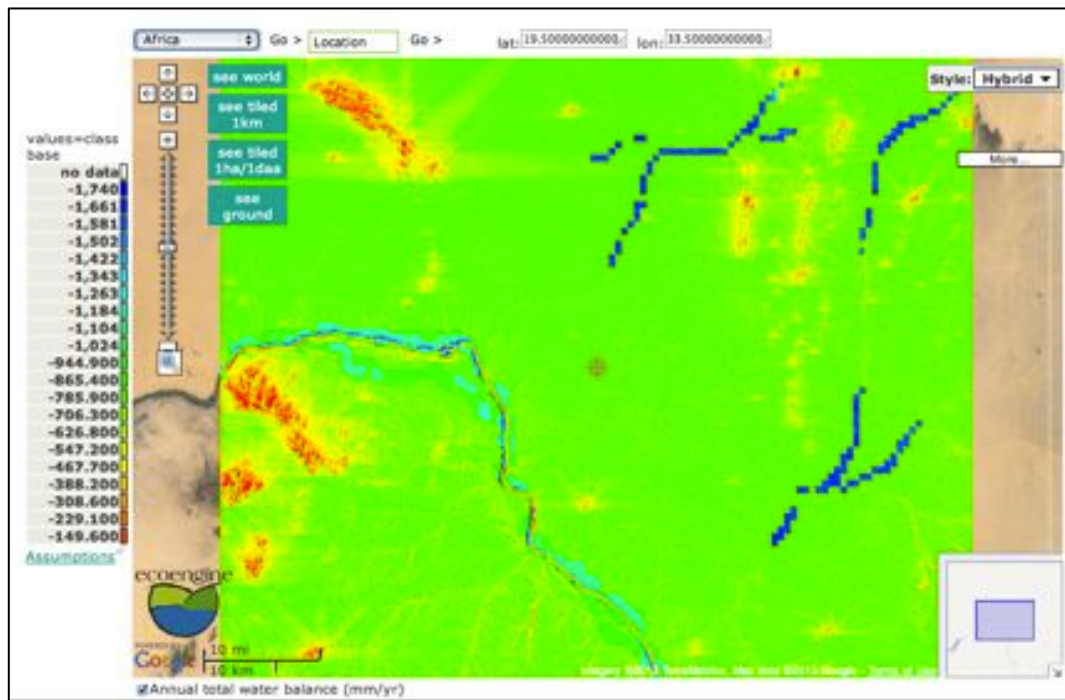


Figure 8.4. Annual Water Balance in Abu Hamad/units in mm/year (WaterWorld 2013)

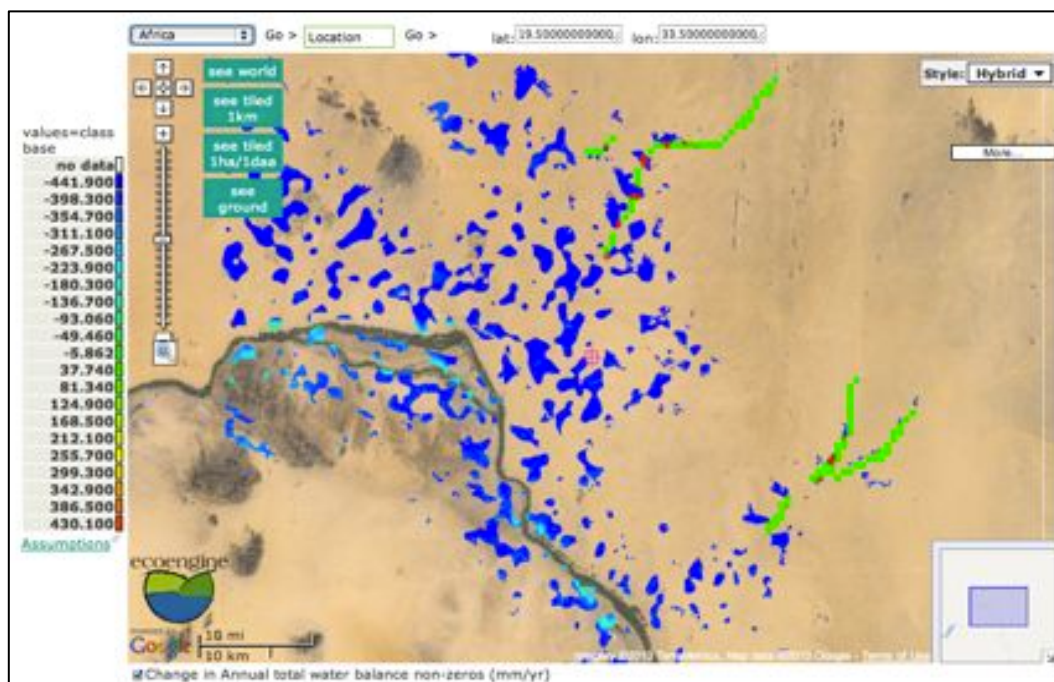


Figure 8.5. Change in Water Balance due to planned 100,000 ha project/units in mm/year (WaterWorld 2013)

### **8.8.3. Wider basin impacts**

The expansion of the range of choice to farmland investment in Nahr an-Nil may have wider environmental and political implications. The baseline scenario revealed by the WaterWorld modelling tool shows that the Jordanian project has little effect on the downstream users but the Qatari project will place significant environmental burdens on local and downstream users with respect to water availability and water security. Despite the assumptions of the Qatari investors, water is a limiting factor for agricultural production on the scale envisaged in Sudan.

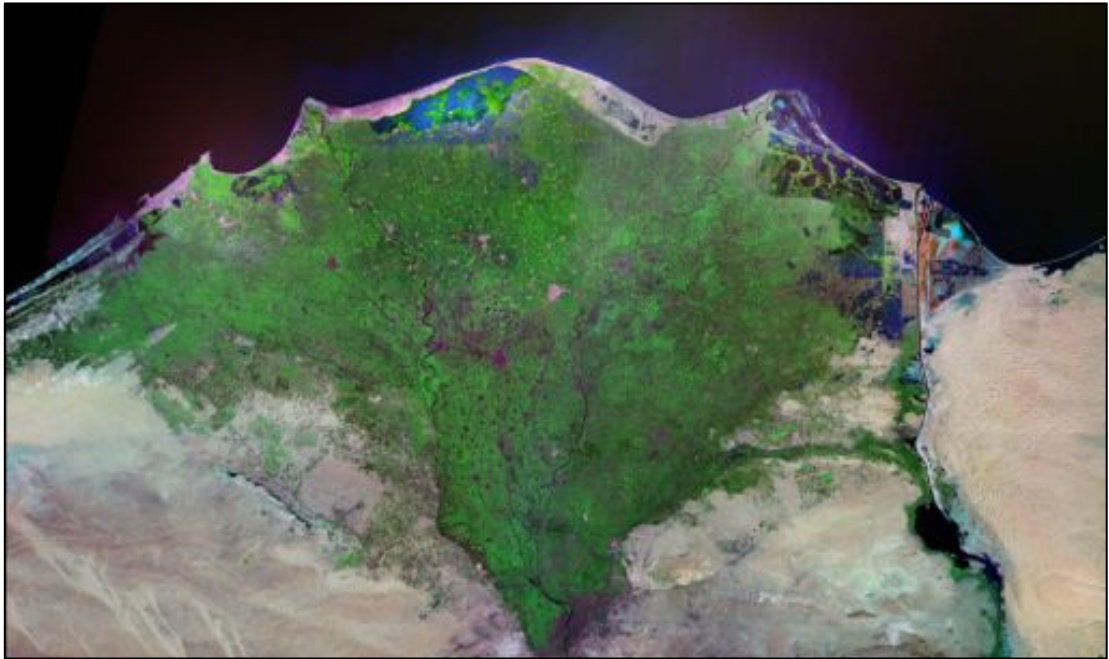
This situation begs the question, who are the downstream users who are and will be affected by the planned use of “blue water” in Abu Hamad? In a highly politicised basin such as the Nile Basin, the affected downstream users are predominantly based in Sudan’s neighbouring economy - Egypt. The next section provides a very brief outline of the hydropolitics along the Nile, which have shaped of Nile riparians for centuries.

### **8.8.4. Hydropolitics in the Nile Basin**

The expansion of the policy options within the range of choice has very practical consequences for the wider basin and thus the politics of water. As outlined in Chapter 2, the Nile Treaty of 1959 concluded that the total annual flow of the Nile had averaged 84 billion  $\text{cm}^3$ , and it also stated that the Nile was to be shared between Sudan and Egypt. Sudan would receive 18.5 (25%) and Egypt 55.5 billion cubic metres (75%) annually (Mohieldeen 2007; Cascao 2009). Despite the “breadbasket” programmes of the 1970s and 1980s and the Agricultural Revival Programme (An-Nahda Al-Zira’ayah) of the late 1990s and 2000s, Sudan’s use of its Nile water share increased by about two billion cubic meters per year in these periods (Mohieldeen 2007). The

downstream users in Egypt fully absorbed all of its allocation and the additional water that Sudan was not yet utilising from its nominal share for their agricultural sector to produce food for Egypt and its export markets. However, it is projected by an internal Egyptian ministerial study that demands in Egypt have increased. Although the Egyptian Government claims that Egypt only uses 56.8 billion  $\text{cm}^2$ , which would already be 1.3 billion  $\text{cm}^2$  more than allocated by the Nile Treaty of 1959, the updated projections of annual water use are dramatically higher. According to an internal study, Egypt will require 71.0 billion cubic metres to meet its domestic, industrial and agricultural demands by 2017 (National Water Resources Plan Coordination Project 2011).

The alarming figures for Egyptian water demand would be affected by the agricultural investment plans of Jordan and Qatar in Sudan. Qatar alone has established a canal from the Nile to its project near Abu Hamad that can convey 1 billion cubic meters per annum to irrigate alfalfa and wheat crops. Hence, the perceived availability of Sudan's share of the Nile does not match the reality. The water of the Nile is already fully allocated in the Nile irrigated lowlands and delta, where the vast majority of Egypt's water is used for agricultural production (Key-Informants #38 and 39). Figure 8.6. shows agricultural activity in the Nile delta. The farmers in Egypt would be seriously impacted by the plans to expand Sudanese irrigated agriculture through the utilisation of the perceived "virtual basin".



**Figure 8.6. The Nile delta satellite view in 2002 (courtesy of Francois Molle of IWMI). This image shows the very significant expansion of irrigated farmland on “new lands” to the west and east of the delta.**

#### **8.8.5. Ethiopia’s dam project**

Sudan is not the only riparian in the Nile delta that seeks to use more water for its agricultural sector. In May 2013, Ethiopia announced its intention to construct the new Renaissance Dam at the Ethiopian/Sudanese border at a cost \$3billion by 2017. It would generate 6000 Mega Watt (MW) for the growing Ethiopian economy (*The Telegraph* 2013). Population growth in Ethiopia is an issue of great concern for the Government in Addis Ababa. While in 2010 87 million people lived in the landlocked East African country, this number is projected to almost double to 165.5 million by 2040 (UNSD 2013). As a result of this rocketing population growth, Ethiopia seeks to transform its economy to provide economic opportunities for the population in which its energy plans play a decisive role. Although the dam would only have minimal downstream effects

once in operation, the filling period from 2017-2022 would use approximately 12 billion cubic metres per year over the five years. This would decrease the water arriving in Egypt by one fifth from the period from 2017 to 2022 (ibid). As shown above, Egypt is already over-using its allocated share of the Nile due to Sudan's inability to utilise its share of the Nile. Ethiopian water demands therefore pose another burden on the future allocation of the Nile water. As a result, decision-makers in Egypt are highly nervous about the hydropolitical developments in the Nile basin as the next section shows.

#### **8.8.6. Egypt's response to the water threat**

Although not induced by the plans to expand the range of choice to farmland investments in Sudan, the hydropolitics of the Nile Basin must be taken into account in relation to the analysis of the limitations to the range of choice. At present, Egyptian decision-makers are more concerned about the downstream effects of the Renaissance Dam, which were shown in an accidentally televised at a meeting between the former Egyptian President Morsi and his technical advisors on the Nile. In an unusually frank manner, the technical committee members demanded military action if Egypt were to be affected by the filling of the dam (*Al Ahram Online* 2013 and Key-Informants #32, 38 and 39).

Such threats have never been implemented in the past. Whether such a threat would ever be translated into practice is beyond the scope of this study. The former Egyptian Minister for Water and Irrigation, Hesham Kandil, raised similar concerns with respect to the increased use of Sudan's share of the Nile. Kandil, who later became Prime Minister under Morsi stressed that a decrease in water for Egypt could potentially prompt Egypt to take military action against its Sudanese partner (Presentation at the

Egyptian Ministry of Water and Irrigation 2012). Whether or not these bellicose comments remain rhetoric, decision-makers in the Arab Republic face major problems concerning the developments in Sudanese agriculture.

The expansion plans which reflect an expansion of the range of choice with the farmland investments in Nahr an-Nil State therefore have wider political implications than in that region of Sudan. Egypt is already exposed to a struggling economy and food insecurity due to its dependence on wheat imports as is the Hashemite Kingdom of Jordan (FAO 2013). The Arab world's most populous economy may therefore face dire challenges to overcome its economic problems as a result of decreasing water resources. Egypt's population is projected to grow by one million people per year, from approximately 78 million in 2010 to 113 million in 2040 (UNSD 2013).

#### **8.8.7. Other basin countries' demands for water**

The Nile Basin is not only faced by more demands for water by Egypt, Ethiopia and Sudan. Other upstream riparians have also registered their interest in using more water for their agricultural sectors also because of increasing populations. For example, Uganda's population is projected to more than double from 33 million people in 2010 to 82.6 million in 2040 (UNSD 2013). Uganda is also currently revising its irrigation policy to increase irrigation agriculture for food production (Key-Informant #40). It is beyond the scope of the study to estimate how much additional water Uganda is going to use for agricultural production. Whatever it does develop may further decrease Egypt's share of the Nile.

The newest state in the world, South Sudan, also has interests in increasing its use of irrigation water from the Nile. However, the current state of this formerly southern region of Sudan makes it unlikely that any plans will materialise over the coming years. No land investments that use Nile water have been reported in other riparian countries of the Nile Basin such as Kenya, Rwanda, Burundi, Tanzania, Eritrea or the Democratic Republic of Congo. The potential impacts are not further discussed in this study. However, the Nile Basin has been described as “the most vulnerable basin” (Thuvo 2013) due to the numerous challenges from population growth, growing demand for food and climate change. International experts working on environmental issues in East Africa describe the ticking “population bomb” as the most urgent concern in the region that will add further pressures on the already over-allocated Nile Basin (Key-Informants #31, 32, 36, 38 and 40). Any decision to use “blue” water for agricultural production in Sudan is highly political and affects Egypt. This study argues that these are the real and most important limits to the expansion of the range of choice to farmland investments. These limits may touch upon the limits of Pragmatism as the next section shows.

### **8.9. The limits of Pragmatism**

This section will analyse the perceptions of decision-makers in Qatar of the availability of “blue” water for increased virtual water “flows” from Sudan to Qatar. Since section 8.7.1 has shown that Jordan only farms on a fraction of its allocated land, it is argued that the impacts are not meaningful. Carrying the full economic costs of the planned investment in Ad-Damar alienated the private sector in Jordan. As a consequence the investment has been implemented to a very limited extent. In Qatar, however, there have been no economic costs constraints on the projects. On the contrary, Qatar seeks to



“divert” one billion cubic metres per year of Nile water as virtual water to the Gulf state for food security.

This plan touches upon the boundaries of Pragmatism. It begs the question of whether Bertrand Russell’s description of American Pragmatism as “some sort of cosmic impiety” to transform the world according to “useful aims” may not be correct? Hassad Food of Qatar would not only interfere in the social environment of the region targeted for investment, it would also interfere in an environmentally constrained river basin such as the Nile. The “useful aims” of Qatar would violate Charles Sanders Peirce’s pragmatic maxim to “*consider what effects, which might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object.*” (Peirce 1878: 293).

The practical bearings of the conceived object - expansion of the range of choice to investment in land and water in Abu Hamad - would be the interference in the environmental status of a river that already faces hydrological “crunch-time”. The expansion of the plans may significantly lead to political tensions between the different riparians of the Nile, who already contest the water use of the river.

The preceding chapters have shown that Pragmatism in both of the analysed countries has been decisively influenced by political factors. Economically and environmentally the transformation of the desired subject matter according to “useful aims” in the economic and environmental sense would lead to potentially dangerous outcomes. However, if the Qatari “useful aims” are analysed through a political lens, the pragmatic maxim may very well be adhered to. The next and final section of the empirical analysis

will analyse what appears to be Qatar's political philosophy underpinning its pragmatic choice to increase its virtual water "flows" through the expansion of the range of choice to farmland investments in Sudan.

#### **8.10. Qatar's political Pragmatism**

It is important at this stage to remember that Hassad has been described as a "tool" of the foreign policy camp within the Qatari shadow state deployed to achieve political ends. Thus, Hassad's investment is in reality a product of one stream of thinking in Qatar - namely investment activities to expand the range of choice to Sudanese farmland. These activities are outside economic and environmental Pragmatism. In fact, they interfere in the most vulnerable basins of the world by adding additional pressures to the availability of "blue" water through diverting annually one billion cubic metres of Nile water to consumptive use in Sudan. If this philosophical Pragmatism is defined in political terms, however, the investment makes sense. This condition makes it necessary to take the analysis into the domain of the foreign policy of this Gulf state.

Qatar's role in global affairs and Middle Eastern political developments has recently received much attention. What is described as an "adventurous" foreign policy seeks to "buy advantage" across the world to reinforce Qatar's geopolitical ambitions (*The Financial Times* 2013). Qatar's foreign policy moves pursue a highly pragmatic philosophy to find and develop allies across the globe for its expansion plans. The Qatar Investment Authority (QIA), of which Hassad Food is a subsidiary, uses its economic power to invest in "economic opportunities" and "emerging trends" (Khatib 2013). QIA invests in equities, private equity, real estate, alternative investments, special situations, strategic and direct investments, and commodities and natural resources (SWF Institute

2013). Translated into practice this portfolio includes property in London (The Shard), equity in European banks (Credit Suisse) and in Asian oil companies, investment in European football clubs (Paris Saint Germain) and farmland across the world. The goals of these ventures are partly economic diversification but they are also politically motivated.

### **8.11. Qatar's foreign policy in West Asia and North Africa**

The political engagement of Qatar across the Middle East is of particular importance to understand the Pragmatism that drives Qatar's investment in Sudan. The underlying philosophy of the Qatari engagement across the West Asia and North Africa region is to transform the objective subject matter according to "useful aims". The "useful aims" of Qatar have been to increase its geopolitical leverage across the world through strategic investments. If viewed through this form of political Pragmatism, the investment of Qatar in Abu Hamad fulfils the pragmatic maxim. Qatar enjoys close links with political Islamist movements such as the Muslim Brotherhood across the region. The intellectual leader of the Muslim Brotherhood movement, Sheikh Yusuf al-Qaradawi, has been granted residence by Qatar since 1961. He cultivates the Muslim Brotherhood movement across the region. Qatar has also supported the Islamist opposition groups in Libya and Syria, the former Egyptian government under President Morsi, the Palestinian Hamas and, most importantly, the National Congress Party of President Al Bashir in Sudan. Qatar's "web of influence" has been widely extended to parties that share the same political beliefs (Achcar 2013; *Financial Times* 2013; Daily Star 2013; *Sudan Tribune* 2013).

In Sudan, Qatar is also actively involved. Qatar has brokered an agreement Darfur by hosting a peace conference in Doha in 2011. This activity exemplifies the geopolitical ambitions of the Gulf state (*Sudan Tribune* 2013). All of this diplomacy and engagement tells a certain story about the foreign policy approach of Qatar over the past years. It is driven by the desire to gain geopolitical influence across the world and especially in the Arab world. Translated to the expansion plans of the range of choice to farmland investment in Abu Hamad, the “web of influence” expresses and exemplifies nature of a Qatar’s foreign policy paradigm that has been driven by a desire to influence the wider politics of the Arab world. The impact of Qatari activities in Sudan on the water security of downstream Egypt is just one such example.

#### **8.12. Qatar: a new shareholder of the Nile?**

In the analysis in the preceding sections it has been shown that the expansion of the range of choice to agricultural investment in Abu Hamad has already, and would in future, impact international relations in the highly politicised Nile Basin, in which the downstream riparian Egypt is increasingly exposed to water scarcity. Qatar’s proposed 1 billion cubic metres per year diversion of the Nile would provide Qatar with increased leverage in Nile Basin water hydro-politics. Translated into a percentage, the one billion cubic meters per year means that approximately 1.2 per cent of Nile waters would be used to irrigate food in Abu Hamad. So the pragmatic maxim of Qatar is motivated by its “useful aims” to increase its geopolitical sphere of interest to the Nile Basin where it could play its preferred role as a “benevolent mediator”. As a result, it could enable the Gulf State to influence water and food politics in the Nile Basin.

As shown in this chapter, producing food in Sudan only provides viable returns if the produce is sold to nearby markets. Food and water could therefore be used as a foreign policy instrument to influence decision-making not only in Sudan but also in Egypt. The water used for food production could not only be transferred in its virtual form to Qatar but could also be transferred to other countries such as Egypt at times of food crises. This additional “bargaining chip” justifies the risks and costs according to a political pragmatic maxim as outlined in the first half of this chapter. To address research question 3.1, the choice of water management options informs the answer to the question. The decision to divert one billion cubic metres per year of “blue” water from the Nile for irrigation suggests a political motivation of the project. It suggests that water is a tool in foreign policy where virtual water “flows” are a tactics of political bargaining. To reference Woertz’s description of American food embargo threats as a “food weapon”, Qatar’s expansion plans to include in the range of choice farmland investments may be interpreted as a novelty in foreign policy, where water may be used as a future “weapon” to influence other states’ politics. The “water weapon” would be a novel development in International Political Economy theory, which has been ignorant of and has ignored the role of water politics in foreign policy. This study therefore argues that the investment in Abu Hamad can only be understood through this form of political Pragmatism, which influences the range of choice.

### **8.13. Concluding remarks:**

This final empirical chapter has illustrated the limitations of the expansion of the range of choice to farmland investment in Sudan by Jordan and Qatar. It has been shown that the commercial, social and environmental risks cross the boundaries of the pragmatic

principles underlying the range of choice concept. It is not within the “useful aims” underlying the range of choice to invest in an area where the economic, social and environmental risks are very high.

As a result, Jordan never fully implemented its expansion plans for the range of choice to farmland investments. Jordan has no other (geopolitical) interests than providing food security to its people. The private sector that was offered the land in exchange for Disi water never took up the offer due to the evident risks. So it was an entirely pragmatic decision to withdraw from the project in Ad-Damar when faced with the economic and social costs.

For Qatar, however, the financial risks were not a major burden. Nevertheless, food production in Abu Hamad would never be able to compete with the prices set by the highly efficient and powerful global “food regime”. The largesse of the water share Qatar obtained from the Sudanese government can therefore be interpreted as the purchase of a “water option” in the Nile Basin. The Nile Basin is one of the regions in the world, where Qatar seeks to expand its geopolitical influence. Hence, the Pragmatism underlying the Qatari project should be viewed through a political lens to understand the objectives of the investment by a subsidiary of the Qatari Investment Authority, Hassad Food.

The chapter concludes that the limitations of the expansion of the range of choice to farmland investments in Sudan reveal the determining role of politics the range of in limiting the range of choice for those wanting to invest in farmland overseas. The next,

concluding chapter of this study will elaborate on this political significance of the range of choice in the two analysed countries, Jordan and Qatar.

# **CHAPTER 9:**

## **CONCLUSIONS OF THIS STUDY AND FUTURE RESEARCH PATHS**



## **9. CONCLUSIONS OF THIS STUDY AND FUTURE RESEARCH PATHS**

*“The two limits of every unit of thinking are a perplexed, troubled, or confused situation at the beginning, and a cleared up, unified, resolved situation at the close.”*

*John Dewey (1933: 106) on Pragmatism*

This thesis explored the investment options within the range of choice of alternatives to the demand-side water management option in Jordan and Qatar. It analysed the drivers and impacts of the analysed policy choice - farmland investment in Sudan - and the limitations of this option. The range of choice concept described by Gilbert White was connected with “food regime” theory, the “shadow state” concept, agrarian development theory, and environmental science and development policies. This framework was particularly useful to illustrate how philosophical Pragmatism has provided insights regarding the political drivers and impacts of investment in agriculture of the two Middle Eastern economies. The next section summarises the core findings of the study.

### **9.1. Scope of the study**

The study showed that these two very different Middle Eastern economies, in both size and political ambitions, are subject to a pressing need to find alternatives to domestic food production. They have both adopted a liberal concept, Foreign Direct Investment in land and water resources, as means to increase food production and secure supplies from outside their territorial boundaries. They both have committed to the option of

“importing” virtual water embedded in food to alleviate domestic water scarcity. Gilbert White’s concept “The Range of Choice in Water Management” was applied and expanded to understand the options available from political economy, social, financial and environmental perspectives.

The underlying philosophy of the range of choice concept is rooted in philosophical Pragmatism conceived and developed by three American scholars in the 19<sup>th</sup> and 20<sup>th</sup> century to provide a philosophical framework for “real-world” enquiries such as alternative approaches to address food and water security. American Pragmatism has shaped this study to understand the options available to decision-makers in Jordan and Qatar in finding a remedy to food and water security within the Arab world.

The potential of agricultural production in Sudan has been identified as the option of choice for this study. Sudan has allocated land and water resources free of charge to governments across the Islamic world as part of its Agricultural Revival Programme of 1999 to entice investment in its agricultural sector. The Agricultural Revival Programme has been labelled as “land grabbing” by members of the international research community, who have highlighted the potential adverse consequences for local populations such as those in Sudan. However, in contrast to the exponentially increasing publications on the potential impacts on Sudan inspired by human rights and livelihood concerns, this study opted for an analysis of two investing countries, Jordan and Qatar.

The study has asked the questions “why and how” to shed light on national and international politics of food from a Pragmatic perspective. In order to analyse the

options available in the range of choice, fieldwork was conducted using a pragmatic “trial and error” method in 12 countries in the Middle East and East Africa. The study also identified “analytic eclecticism” as the preferred method of choice for the subject of the study - namely the potential option to expand the range of choice in Jordan and Qatar to engage in farmland investment in Sudan.

Chapter 2 showed that water for agricultural production is insufficient in both the Hashemite Kingdom of Jordan or in the State of Qatar. It also outlined the alternative options to demand-side management in both economies. Investment in land and water resources was identified as the preferred option to provide a remedy to the decreasing availability of water resources via virtual water “imports”. Chapter 3 showed that this strategy had been tried before in the 1970s by utilizing the perceived land and water potential of Sudan for food production. It presented the past experiences using the lens of the “import” of virtual water option of Middle Eastern economies. In the same chapter, the current investment plans were described for Jordan and Qatar, together with how the Sudanese government under President Omar Al Bashir has allocated land for international investors from the Muslim world. This analysis fed into a discussion of the “land grabbing” discourse that has permeated international development debates over the past years. The term “land grabbing” was analysed and brought into the discussion with the Jordanian and Qatari investment plans in Sudan. “Land grabbing” was deemed not to be a useful description of the plans by Jordan and Qatar to invest in Sudanese farmland.

Chapters 4 and 5 introduced the theoretical framework and methodology used in the study. The range of choice concept in water management was developed by “the most

influential US geographer of the twentieth century”, Gilbert White, to analyse all of the available options in water management (Wescoat 2006). The option with which this study has been concerned has been farmland investment in Sudan by Jordan and Qatar. American Pragmatism was deployed as the study’s philosophical framework, which is the underlying philosophy of the range of choice concept. Pragmatism was connected with critical theories from international political economy, sociology, development theory and environmental sciences. The methodology introduced “analytic eclecticism” as the methodology of choice deployed by this thesis to analyse the multi-disciplinary drivers and limitations of the range of choice concept.

In order to document the international drivers of the range of choice concept, Chapter 6 showed how highly centralised and globalised food supply chains leave the Middle East, and thus Jordan and Qatar, highly vulnerable in the global political economy of food. “Food regime” theory explained how these global food supply chains have developed over the past century. It was shown that the power of the corporate “food regime” greatly impact water scarce regions such as the Middle East that are highly dependent on food imports from the so-called “food bowls” of the world, which in turn are subsidised by Western taxpayers with several billions of US Dollars per year. Only if water is brought into the analysis, can the full power of global food supply chains be understood.

As a consequence of the absence of readily available domestic water resources for food production, the vulnerability of the two analysed Middle Eastern economies, Jordan and Qatar, can be readily grasped. However, the second and third “food regimes” - the second from the 1940s to the end of the 1970s and the third from the early 1980s up the

present - have also had profound political impacts on political relations between the United States and Middle Eastern economies.

Food has been used as a geopolitical threat in Western-Middle Eastern relations, which has left a lasting impact on “memories of concern”. The political power of the “food regime” was therefore highlighted in Chapter 6, as a driver of foreign direct investment activity by Jordan and Qatar in Sudan to provide a remedy to food and virtual water “import” dependency. It was shown that both Jordanian and Qatari decision-makers are aware of their vulnerability in the global political economy of food trade. Independent Sudan was therefore identified as an option for both economies to liberate themselves from Western agricultural power.

The international drivers of the expansion of the range of choice to farmland investments in Sudan explain only one side of the story. The structural socio-political developments in Jordan and Qatar were therefore analysed as another important reason for agricultural investments in Sudan. In Jordan, the Palestinian ascendancy in the nation's private sector and in food production and water use in particular within the Jordanian “shadow state” was identified as an important factor as the underlying political driver that has shaped the range of choice in the Hashemite Kingdom. Jordan has been exposed to gradual social change since the 1948 Arab-Israeli war. Jordan's role as a refuge to Palestinians was brought into the analysis of the agricultural question. The increasing power of Palestinian private sector traders in Jordan was analysed to explain their structural power within the political economy of food in Jordan. The Disi farms project in Southern Jordan marked an important step to illustrate the shift in power relations. Three Palestinian families and one Transjordanian family,

who used the allocated farmland to grow food for export, have operated the four farms in Disi. After the United States and other donors called for an end to the unsustainable use of water resources for food production in Disi, the Jordanian government offered farmland in Ad-Damar in Sudan as a trade-off for the closure of the farms. The Jordanian range of choice is therefore decisively impacted by social power relations, which can be explained by the concept of the “shadow state”.

In Qatar, the “shadow state” is composed of a network around the ruling Al-Thani family. Similar to Jordan, the political power of the Emir in Qatar is based on the allegiance of powerful families that have supported the monarchy for more than 150 years. Power is not a wild card in Qatar for its ruling group. It has to be earned through allocating political and economic resources to powerful families. Out of the networks of powerful families, certain political camps have emerged. This Qatari “shadow state” has associated itself closely around sources of revenue such as the Qatar Investment Authority and related political institutions.

In the politics of food in Qatar, two camps have established themselves, around the Qatar Investment Authority on the one hand, and around the Qatar National Food Security Programme on the other. The camps were initially separated by their political task. While the Qatar National Food Security Programme was conceived to invest in the domestic agricultural sector, the subsidiary of the Qatar Investment Authority, Hassad Food, was given the task of investing in overseas farmland. However, the two camps behind the institutions started to fight each other when the camp behind the Qatar National Food Security Programme showed an interest in overseas investment as an expansion of its range of choice. Overseas investment has been a foreign policy

preserve in Qatar. The camp around Hassad Food, which has been in charge of foreign policy, found itself challenged over the politics of trading food and investing in farmland in Sudan. Serious internal conflictual political struggles over the best way to influence the range of choice ensued. However, since Hassad Food is in the political camp of the foreign policy makers in Qatar, the objective to invest in Sudanese land and water resources embeds a strategically political vision when analysed through the lens of the philosophy of Pragmatism.

Chapter 8 illustrated the limitations of the range of choice expanded to farmland investment in Sudan. Farmland investment on the scale intended by Jordan and Qatar could end up costing billions of US Dollars due to the high risks of agricultural development in a developing country such as Sudan. Risks have been identified as a consequence of the absence of agricultural skills to develop and manage large-scale agricultural projects in Sudan and around the globe. The structural adjustment programmes of the International Monetary Fund in Sudan were shown to have taken their toll on agricultural training and human development. Hence, investors not only have had to rely on non-Sudanese, international experts but also have had to invest in training facilities to train local farmers. In addition health factors and fuel costs have decisively added costs to the range of choice.

For Jordan, the high economic risk of the planned investment in Ad-Damar led to the withdrawal of the Jordanian private sector companies associated with the “shadow state” (Hopma 2012). As a result, the Hashemite Kingdom never fully utilised its allocated share of land in Sudan. Only the Jordanian army continues to invest albeit on a much smaller scale of approximately 5000 hectares (Key-Informant #17).

In contrast to the widespread low expectations among the critical research community on agricultural investments such as those in Sudan reviewed in this study, Jordanian and Qatari investors view social factors to have a minor impact on the feasibility of investments. This is owed to social and cultural factors that have led to “embedded autonomy” between the tribes of Nahr an-Nil and the central Government in Khartoum. The bureaucratic elite in Khartoum partly consists of tribal members of the leading tribes in Nahr an-Nil state, and hence investors from both Jordan and Qatar have enjoyed good relations with local tribes due to the influence of kin working in Khartoum on tribes in Nahr an-Nil state.

Any investment, however, involves high risks for local and regional water resources. Projects of the size of those of Jordan and Qatar would significantly affect local and regional water users. Jordan’s failing project has had little impact on the Nile flows. The Qatari plan to divert 1 billion cubic metres per year of water from the Nile would have a very major impact and involve “a certain degree of madness” (Russell 1948). From a Pragmatic perspective, the Qatari expansion plans of the range of choice would not fit into the Pragmatic philosophical underpinnings of the range of choice theory. Only if the wider transboundary politics and Qatar’s recent foreign policy were brought into the equation, would the investment in Abu Hamad make sense from a pragmatic perspective.

Qatar’s plans to expand the range of choice to Sudanese farmland would enable the country to become a shareholder of the Nile, which reflects the recent trend in Qatar to bet on emerging foreign political trends. Through the greater use of water in an already



fully allocated basin such as the Nile, Qatar could expand its web of influence by controlling a significant share of the Nile. Therefore Qatar could not only expand its range of choice to farmland investments to ensure food security in Qatar but also influence the politics of water in the already water-stressed Nile Basin. The expansion plans of the range of choice concept are thus highly political and cannot be understood without understanding the international politics of water in the Nile Basin.

## **9.2. Future research directions**

Middle Eastern politics are highly perplexing, troubled and confusing. The current political developments across the region with its hotspots in Egypt, Syria, Lebanon, Yemen, Tunisia, Libya, and the Palestinian Territories have not been the subject of this study. Yet, the inquiry into the politics food in Jordan and Qatar sheds much light on the politics of the whole region. Water and food security aggravated by population growth will be a make- or-break- topic for the whole region. Although it is acknowledged by this study that every country has different food politics, the international and domestic drivers are in some ways very similar. The limitations of possible expansion plans of the range of choice to farmland investment certainly apply to each country faced with food and water insecurity. The global “food regime” and its food supply chains secures the water and food security of all of them.

As a result, the range of choice analysed in this study is of wide relevance. The alternatives to demand-side agricultural water management are of concern to almost all countries in the Arab world. Affordable and sustainable food production will determine the political-economic development path of the Arab world in the years to come.

As the study showed, the Middle East as a region is becoming increasingly water-scarce and new strategies need to be conceived to feed its growing populations. An important area for future research directions is the position of the Middle East as a region in the globalisation of food politics. Without effective strategies to invest in farmland across the world and “import” virtual water to alleviate the regional water crises, the region will be “sandwiched” between the hegemons in the West and the growing economies of South and East Asia.

The Middle East needs to find immediate responses to establish similar traders akin to those of the West. However, most of the “prime cuts” of global agriculture have already been taken by the Western ABCD corporations and the East Asian Nows corporations. Middle Eastern economies need to identify farmland that can be sustainably intensified in other areas where the actors of the global “food regime”, the ABCD and the Nows, have not already established long-standing contracts. Such investments and developments will require careful environmental, economic and political evaluation. The choice is to invest in regions where land and water resources are readily available, market volatility is limited and which will not be subject to severe pressures from climate change. Or in the high risk regions where physical and institutional infrastructure are weak and climate is variable and markets are volatile.

Negotiating preferable trade agreements with strategic agricultural suppliers will also require significant political skills from Middle Eastern governments. The Middle East as a region will have to find answers to strategic food deficits where water resources must be understood all along - sometimes very long - food supply chains. The “mega question” of the next decade across the region will be how food and “virtual water”

waste can be minimised while at the same time increasing investment across the region? All initiatives must be conducted in a transparent manner by ensuring the participation and trust of the target populations. All of these “mega-challenges” require new research directions to identify feasible strategies in the battle against food and water insecurity.

The current political unrest across the region is unlikely to change in the immediate future. The region can be described as being subject to a period of “Schumpeter’s gale”, which is the “creative destruction” of a current economic order. After decades of oil rents in the Middle East, the shift to “green” investment practices will require nothing less than a paradigm shift across all levels of society.

The environment will have to be given high priority in any future policy-making. Governments will need to understand these challenges and persuade consumers and the private sector to become “greener” than they are at present. There will be no alternative to demand-side management of natural resources such as water and food. A possible way to introduce demand-side management measures could be the adoption of “water accounting” practices for food-water. At present, societies across the region are ignorant of their overuse of water resources embedded in food. However, such initiatives cannot be government-led but have to be positioned in the private sector including consumers. Before coming back to “water accounting” tools for improved decision-making, the pivotal role of the private sector will be illustrated.

As this thesis has shown, the private sector is deeply intertwined with the public sector in relation to food and water politics. A second issue of concern will therefore be the strategic repositioning of the State, and especially the “shadow states” in the Middle

East. This study has illustrated the role of the Jordanian and Qatari “shadow states” in the expansion of the range of choice with respect to achieving food and water security. At present, politically motivated investors still dominate farmland investment in both Jordan and Qatar. This situation echoes an economic development model that is now becoming a liability for future growth. As Ray Bush notes, the people of the Middle East are the greatest strength of the Middle East; hence the Leviathan state controlling and distributing public resources is the greatest burden for a new economic development paradigm (Bush 2011).

The Arab Middle East needs a new economic development model based on a competitive, entrepreneurial, and inclusive private sector that is taking the lead, and not only in initiatives to provide food and water security (Malik and Adawallah 2011). Such a shift would finally connect the Middle East to the globalized economy of agriculture and it finely tuned food supply chains in a mode of engagement that is both more constructive and effective.

As in most regions across the world, the public sector will be unable to provide food security. However, the Middle East could draw lessons from East Asia where the governments have established an “enabling policy environment” through strategic subsidies and financial support for the Nows trading corporations. Similar initiatives need to be envisaged in the Middle East to avoid dependency on the current global “food regime” and the global political economy of food and its volatile commodity markets.

Allowing the private sector a greater share in food security politics would have to be enabled by public sector loans that involve environmental sustainability as a conditional factor. An increased role for the private sector in investment and effective food supply chain management would have to be accompanied by public institutions that support the private sector in its activities to increase food and water security.

This thesis therefore concludes that future research on Middle Eastern food and water management should focus on the private sector and on the daily business activities of private sector agents including farmers. As mentioned above, research on “water resource accounting rules” could provide a solution for water-stressed economies. Accounting for water all along the supply chain from farm to fork could decrease the water use of Middle Eastern economies. Initiatives such as the CEO-Water Mandate - an initiative of the United Nations Environment Programme and the Pacific Institute in Oakland have identified possible strategies for the private sector to achieve water and food security (CEO Water Mandate 2011). This approach involves the standardisation of water foot printing in food imports, which are accounted for across the food supply chain to minimise waste and inefficiencies. However, the retail sector in the Middle East is highly dispersed with millions of small corner shops selling food to consumers. Yet, food processing and trading is conducted in a centralised way, and thus it will depend on the private sector to implement water resource reporting and accounting measures to decrease food waste.

A third issue of concern will be the future relationship between Middle Eastern economies and previously neglected world regions such as Central Asia and Sub-Saharan Africa. Due to its high rainfall and the availability of “green” water, Sub-Saharan

Central Africa has the potential to become a net-exporter of food crops such as sugar, rice and livestock. However, as Chapter 8 showed, the spectres of the past in the form of “structural adjustment programmes” have left Sub-Sahara’s agricultural sector in a heavily under-invested state. Similarly, Central Asian economies where wheat can be grown for the Middle East lack investment in agriculture. The Middle Eastern private sector would have to be enabled, not only to invest in the physical infrastructure in Central Asia and Sub-Saharan Africa but also on the social side, to increase the availability of agricultural expertise conducive to food production.

Such initiatives need to be accompanied by a geopolitical shift in the Middle East where the focus of attention shifts to previously neglected world regions. At present, Middle Eastern universities have very few research institutes that study the economic and social situations in the former Soviet Union and Sub-Saharan Africa. This disadvantage needs to be overcome through a paradigm shift to educate the young generation in the Middle East to be more aware of the challenges and opportunities in other developing countries in the world. The inflow of oil rents will therefore have to be diverted to numerous initiatives with an emphasis on the new challenges of the twenty-first century.

The challenges of the coming decades can be subsumed under the term “green”. After decades of “brown growth”, the Middle East will have to quickly “turn” green. The paradigm shift from a focus on “brown” oil rents to “green” efficiency has a deeper message. As some media commentators have predicted for some time now, water will become the new oil (*The Guardian* 2007; *Newsweek* 2010; *Rolling Stone Magazine* 2011). If the Middle East, and Jordan and Qatar, want to become water-secure in the coming years and decades, water will indeed have to play a similarly prominent role in

the perceptions of decision-makers and consumers to improve the use of water in both economic and social life. This message requires further social research on how to change the perceptions of the Arab world on the preciousness of water in everyday life. Water will have to play a prominent role in the education of society to emphasise its crucial role for future economic development in the Middle East.

Having outlined future research recommendations for food and water security in the Middle East, I would like to end this thesis with a few personal words on how it has impacted my career as a researcher of Middle Eastern water challenges. It has been a highly puzzling and challenging topic to research from the outset of this study. When I started my research the old political structures in the Middle East were still in place. My research path has taken me to twelve countries where people are all affected by food and water insecurity, yet in unique ways. Often they are also affected by political change as a result of the so-called Arab Spring. Having researched the water question during times of political volatility, the outcomes of which have been unpredictable, has been a very rewarding and fascinating task. Over the coming years and decades, I am going to continue working on water and food security in the Middle East and in other regions of the world. Finding sustainable answers to investing out of the dismal water predicament of “importing” virtual water in food for the benefit of the masses is a wonderful topic that will require much attention over the coming years. Climate change and population growth also function as triggers for further work on the various and complex challenges of the water and food question in the Middle East.

All of the above-outlined future research challenges matter for now; however, it can be predicted with confidence that there will be other as yet unknown challenges to be

overcome by Middle Eastern societies. A Pragmatic approach of always questioning the “useful aims” of one’s research direction help to revise and restructure one’s research direction. One of most urgent topics to address over the coming years and decades will certainly be how to mitigate water and food scarcity.



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Corresponding Number #	Role and affiliation of the interviewee	Date and Place of interview
1	Head of government authority	8 May 2011 Doha, Qatar
2	Senior advisor to an investment company	8 May 2011 Doha, Qatar
3	Senior civil servant to a government unit	9 May 2011 Doha, Qatar
4	Former government minister	15 November 2012 Doha, Qatar
5	Former head of unit at an international donor organisation	5 April 2013 via email
6	Head of investment company	13 November 2012 Doha, Qatar
7	Senior advisor to an investment company	22 March 2011 Dubai, UAE
8	Agricultural investor in East Africa	15 September 2012 London, UK
9	Former government minister	28 February 2011 Amman, Jordan
10	Former government minister	2 March 2011

		Amman, Jordan
11	Former government minister	10 March 2011 Amman, Jordan
12	Senior journalist of a national newspaper	12 March 2011 Amman, Jordan
13	Senior civil servant in the Ministry of Agriculture of the Hashemite Kingdom of Jordan	20 February 2011 Amman, Jordan
14	Senior academic in water resource management	18 February 2011 Amman, Jordan
15	Senior academic in agricultural sciences	18 February 2011 Amman, Jordan
16	Senior academic in agricultural sciences	20 February 2011 Amman, Jordan
17	Head of an investment company	17 February 2011 Amman, Jordan
18	Head of an investment company	03 March 2011 Amman, Jordan
19	Junior advisor to an investment company	5 March 2011 Amman, Jordan
20	Deputy head of investment unit	31 May 2011 Cairo, Egypt
21	Senior civil servant in the Ministry of Agriculture	16 May 2011 Khartoum, Sudan
22	Senior civil servant in the Ministry of	15 May 2011

	Agriculture	Khartoum, Sudan
23	Senior expert at an international organisation	16 May 2011 Khartoum, Sudan
24	Senior expert at an international organisation	16 May 2011 Khartoum, Sudan
25	Junior civil servant at the Ministry of Water and Irrigation	12 May 2011 Khartoum, Sudan
26	Senior international advisor	17 February 2013 Cairo, Egypt
27	International journalist	16 February 2012 via telephone
28	Foreign correspondent of an international newspaper	15 November Doha, Qatar
29	Head of an international organisation	3 October 2010 Nairobi, Kenya
30	Correspondent of an international newspaper	24 August 2010 Nairobi, Kenya
31	Correspondent of an international newspaper	18 August 2010 Nairobi, Kenya
32	Correspondent of an international newspaper	18 April 2013 Cairo, Egypt
33	Head of unit of an international	12 December 2011

	commodity trader	London, UK
34	Head of unit at an international investment house	15 October 2011 London, UK
35	International agricultural advisor	12 March 2012 London, UK
36	Head of Unit at an International Organisation	Email Conversation 18.11.2010
37	Former Financial Advisor in Saudi Arabia	15 December 2012 London, UK
38	Advisor to the Egyptian Ministry of Water and Irrigation	03 April 2012 Cairo, Egypt
39	International Advisor and Head of Research at a Cairo-based think tank	29 March 2012 Cairo, Egypt
40	International advisor in East Africa	13 November 2012 Doha, Qatar
41	Senior agricultural advisor on MENA food security	15 April 2012 Cairo, Egypt
42	Head of an international research institution	20 February 2011 Amman, Jordan

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